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ABSTRACT

Based on an in-depth study of the staffing of the California State University (CSU) libraries at Pomona, San Bernardino, and San Francisco, this report examines the adequacy of the formulas used to allocate staff to the 19 CSU system libraries. Focused on the impact of library staffing on the ability of students and faculty to access and use information, findings are presented for the seven operation areas of collection development and management, organizing for use, access services, instructional services, reference and research, staff development, and collegial and administrative activities. It is concluded that current library staffing shortfalls seriously impair library access and use, and a 13% increase in staff system-wide is recommended, as well as an increase to 33% in the proportion of total staff at the professional/management level. The text is supplemented with three tables, and an 11-item bibliography is provided. Appendices include: (1) current library staffing formulas and definitions; (2) a chronology of formularized funding for CSU libraries; (3) a functional description of CSU library staffing workload; (4) the mathematical research model; (5) a derivation of access services workload elements; (6) the application of funding formulas by campus and cost center; and (7) Association of College and Research Libraries (ACRL) standards applied to CSU libraries. (Author/KM)

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LIBRARY STAFFING NEEDS IN THE CALIFORNIA STATE UNIVERSITY

A Report of the Task Force on Library Staffing

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Office of the Chancellor, The California State University

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LIBRARY STAFFING NEEDS IN THE CALIFORNIA STATE UNIVERSITY

A Report of the Task Force on Library Staffing

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April 1987

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ABSTRACT

In 1985 Provost William Vandament appointed the CSU Task Force on Library Staffing with the charge of evaluating the adequacy of the formulas used to allocate staff to the nineteen CSU libraries. The perception of need for such a study arose from a review in 1982 by the Department of Finance, and the resulting awareness by the CSU that the existing formulas had become outdated in their reflection of contemporary academic library staffing requirements.

To respond to its charge, the Task Force contracted with the library consulting firm of King Research, Inc. (KRI) to perform an in-depth study of staffing at the libraries at Pomona, San Bernardino and San Francisco. To guide the data gathering by KRI and the analysis of findings, the Task Force developed a comprehensive functional description of library staffing workload. Seven areas of library operation are identified: Collection Development and Management, Organizing for Use, Access Services, Instructional Services, Reference and Research, Staff Development, and Collegial and Administrative Activities. In addition, KRI and the Task Force examined the literature and surveyed the practices of other university systems to determine if any similar studies had been done or formulas implemented which could guide the Task Force in its effort.

The focus of the study and of the recommendations of the Task Force is on the impact of library staffing on the ability of students and faculty to access and use information. On the basis of the data gathered by KRI, the Task Force concludes that library staffing shortfalls presently exist which seriously impair this access and use. Instructional Services, Reference and Research, and Library Data Processing are the areas determined to be most in need of augmentation.

To correct the significant understaffing found to exist in CSU libraries, the Task Force is recommending an augmentation of 198 full-time equivalent positions systemwide, an increase of 13 percent over the level provided by current formulas. It is also recommending an increase in the proportion of total staff at the Professional/Management level to 33 percent, up from the current 25 percent. Revised staffing formulas are presented which will effect these changes. The Task Force views this augmentation as a conservative estimate of basic staffing needs; areas of additional study are recommended which would likely be proven in need of increased staff.

The Task Force concludes that failure to implement these recommendations would result in CSU libraries being unable to effectively respond to the growing complexity of modern information services required by faculty and an increasingly diverse student body. This would, in turn, result in the CSU losing its competitive position in the attraction and retention of faculty and students whose expectations for state-of-the-art information services continue to rise.

I
INTRODUCTION

> *The libraries of America's colleges and universities are in the midst of a period of unprecedented change and adjustment. Academic libraries have never been static organizations; they have existed within and responded to changes in the institutions of higher education they serve . . . Today's academic libraries are facing a series of challenges that arise from factors both internal and external to the library itself. As libraries, the primary information resources on campuses, enter the so-called "information age," they face a number of common problems. Libraries' responses to these challenges will determine the shape of the academic library of the future. (Moran, 1984, p. iii)*

This excerpt from Barbara Moran's *Academic Libraries: The Changing Knowledge Centers of Colleges and Universities* aptly describes the climate of change confronting the nineteen libraries of the California State University, change which is a source of strain on every aspect of library resources. As university libraries — or "information centers" in contemporary jargon — each of the nineteen is expected to meet the needs of students and faculty for access to an ever-increasing body of knowledge recorded in an increasingly complex array of formats. Libraries collect information in the form of books, periodicals, video and audio cassettes, laser disks, microfilm and microfiche, machine-readable databases, and more. In addition, libraries access information from hundreds of remote databases which can be called up through a microcomputer with a telephone modem.

Technology has changed the way academic libraries function in other ways as well. Cataloging is now computer-produced through online remote utilities such as the OCLC network based in Ohio. Computerized circulation systems permit rapid checkout of library materials and record-keeping, and the traditional card catalog is being first supplemented, and ultimately replaced, by a computerized online catalog (the "OLPAC"). More technology arrives steadily: CD-ROM laser disk storage, microcomputers and circulating software collections for use by students and faculty, and computer-based electronic communication networks are examples. This technology raises the expectations of students and faculty, which in turn results in more intensive use of the library's resources. The OLPAC, for example, is a powerful reference tool which dramatically opens the collection to wider and more frequent use.

All this change has had a profound effect on library staffing. Shifts in the patterns of staffing within libraries as well as the changes in total numbers of personnel required have occurred. The new technology has created an environment much more demanding of librarians' professional skills, and more demanding of patrons' knowledge of the information resources now available. One consequence, as an example, is a growing need for library instruction delivered by librarians. Unfortunately, the budgeting mechanisms designed to provide staffing levels adequate to deliver library services have not kept pace with this change.

Student access to information, the primary mission of the CSU libraries, is increasingly impaired by the staffing difficulties those libraries are experiencing.

Library Staffing Formulas in the CSU

Staffing allowances for CSU libraries are determined by formulas originally developed in the early 1970s. Intended to allocate staff on the basis of measurable library workload, the formulas generate both numbers of full-time equivalent positions and the proportions of those positions to be funded at the professional/managerial and support levels. Formula "drivers" or input factors include full-time equivalent student and faculty counts, graduate student count, and volumes budgeted for acquisition. (See Appendix A for detail of the current formulas and definitions.)

The changes which have occurred over the years to CSU library staffing formulas have primarily been intended to reflect the effects of library automation; position reductions in return for state support of automated circulation and cataloging were implemented in 1978-79 and again in 1983-84. Since 1978, a total of 156 FTE positions have been yielded by CSU libraries due to automation programs. A chronology of library staffing formula revisions and reviews can be found in Appendix B.

The reductions imposed in 1983-84, the result of a review of CSU library staffing formulas conducted by Department of Finance staff, were particularly severe (DOF, 1982). In addition to 99 positions eliminated due to implementation of the automated circulation and cataloging systems, 67 FTE were taken on the strength of arguments by the DOF that the formulas for the Circulation and Public Service cost centers were not valid. In addition, the DOF concluded that the mix of professional versus support staff should be reduced from 33 percent positions funded at the professional level to 25 percent; the result was a loss of $1 million effective with the 1983-84 fiscal year.

The CSU contested the DOF rationales for changes to the Circulation and Public Service formulas in a 1983 report to the legislature (Office of the Chancellor, 1983). While the analysis presented in that report was successful to the extent that 31 positions were restored in response to the arguments it contained, it was apparent to the committee appointed to prepare the report that a comprehensive study of library staffing needs was in order. The committee concluded that the existing library staffing formulas — officially designated as "interim" since 1976 — were outdated and not defensible to external agency review inasmuch as they did not accurately reflect contemporary academic library workload. In the committee's view, CSU libraries share the dynamic qualities characterized by Moran but have been seriously hampered by the static nature of their funding formulas.

The Task Force on Library Staffing

Following the recommendations of the committee charged with responding to the DOF review, the CSU Library Advisory Committee requested that the Provost appoint a systemwide task force to study the adequacy of the library staffing formulas. Provost William Vandament appointed the task force in June, 1985 with the following charge.

The task force is charged with reviewing and, if necessary, proposing revisions to the existing "interim" funding formulas for library staffing. That effort will likely involve the following specific tasks:

1. reviewing the history of CSU library staffing formula development;

2. identifying areas of workload not accurately reflected in current formulas;

3. analyzing the impact of automation on library staffing needs;

4. gathering and evaluating data necessary to empirically support any necessary formula revisions; and

5. developing a series of recommendations on funding formulas for presentation to the Board of Trustees and state budget review agencies.

The sections which follow present the findings and recommendations developed by the Task Force on Library Staffing to meet this charge.

II

BACKGROUND AND METHODOLOGY OF STUDY

The Task Force began its work with a search of the literature pertaining to library staffing and formularized funding. The aim of that search was to determine if similar studies of library staffing needs have been conducted by other universities which might provide guidance in the CSU's study, and to determine if any standards exist against which CSU's library staffing levels could be measured. The Task Force was particularly interested in reviewing any recent studies which focus on the staffing implications of changes in library and information technology.

The results of the literature search were disappointing; while six state university systems use formulas for determining library staffing, none has undertaken an in-depth study of library workload aimed at evaluating and updating their budgeting procedures. A review of library staffing formulas was conducted in the late 70s by the State Council of Higher Education in Virginia (Metz and Scott, 1981), but that study was aimed at developing formulas which more accurately reflected existing staffing levels than at empirically assessing staffing needs and revising formulas accordingly.

The literature review and survey data obtained for the Task Force by King Research, Inc. were, however, informative in comparing the types of staffing formulas in use in other university systems with those used by CSU, and in suggesting the kinds of issues the Task Force should examine in its own study.

King Research, Inc. (KRI) conducted a survey of all state university systems in the U.S to determine whether or not formula staffing was used for libraries, and if so, how the formulas were constructed (KRI, 1986). KRI examined the six systems which use formulas, and found that those formulas have in common the use of such factors as full-time equivalent student count (FTES), full-time equivalent faculty count, and volumes acquired to calculate staffing levels. A prescribed proportion of professional versus support-level staff was also common. No system was found to employ any measures of library use and staff workload other than the traditional indirect ones such as those listed above. Included is the Virginia system: the authors of the study mentioned above concluded that FTE input factors are statistically and practically the most desirable staffing formula drivers.

Two articles of particular interest to the Task Force were found which address the staffing implications of technological change in libraries. The first article presents a study of the impact of automation on the staff and organization of a medium-sized academic library (Kaske, 1978). Major organizational effects were found in the creation of two new units: system development and operations. Also found were staffing impacts which involved both the elimination and creation of positions: a shift was found to jobs requiring greater knowledge, skills and training and away from those requiring repetition of routine tasks. Professional staff whose positions were eliminated were reassigned to such areas as orientation, administration, and reference. Support positions were retained and in some cases upgraded to reflect more

specialized skills, and additional higher-level support positions were created. Morale and turnover problems were found where support positions were not upgraded to respond to the more demanding nature of their tasks.

The second article discusses the relationship between online bibliographic services and nstruction offered by librarians in the use of information resources (Freides, 1983). The author of this article argues that the online search process creates a tutorial relationship between librarian and patron which in effect contradicts the traditional outcome of library information instruction, i.e., self-help and independence. This is because the librarian tends to become involved in the search process from beginning to end: helping the patron express a problem in terms required to yield a successful search strategy, ensuring that the most appropriate resources (online and otherwise) are explored, and helping to evaluate the outcome of the search. The author concludes that as this activity increases, professional-level staff requirements will increase accordingly.

Standards for Library Staffing

A comprehensive set of standards was developed by the Association of College and Research Libraries (ACRL) in 1959, with review and revision in 1975 and again in 1986. These standards, according to their authors, "seek to describe a realistic set of conditions which, if met, will provide a college library program of good quality. Every attempt has been made to synthesize and articulate the library profession's expertise and views of the factors contributing to the adequacy of a library's budget, resources, facilities, and staffing, and the effectiveness of its services, administration, and organization." (College Library Standards Committee, 1986, p. 190)

The ACRL standards are intended to apply to four-year, non-doctoral-granting institutions such as the nineteen CSU campuses, and are viewed by the Task Force as providing a useful yardstick for a very general-level appraisal of staffing adequacy. Their revision in 1986 makes them timely for the work of the Task Force as that revision was expressly aimed at accounting for the demands of new technology in academic libraries. A detailed discussion of the standards is presented in Section IV, and their application to the CSU can be found in Appendix G.

Rather than rely, however, on such standards for the basis of its recommendations, or upon surveys of library staff and administrators such as were used in the Virginia study, the Task Force concluded that the most effective way to meet its charge was to carefully define and describe the nature of library staffing workload in the CSU and to gather empirical evidence from which an assessment of staffing adequacy can be obtained. The first step in that effort was the description, function by function, of the workload of the library.

A Functional Description of CSU Library Staffing Workload

The mission of the libraries of the campuses of the California State University is to support and enhance campus teaching and research activities through the preservation of knowledge

and literary tradition in its written form, through access to current information in its variety of manifestations, and through instruction in the use of information resources.

This mission requires today's library-information center to be a complex, multifaceted organizational system. A well-trained staff possessing diverse backgrounds is required to organize and operate this multimillion dollar enterprise; its activities range from the relatively routine, such as circulating library materials, to the highly complex and creative, such as planning for and implementing new information technologies.

To attempt to capture this diversity in demands on library professional and support staff, the Task Force identified seven broad functional areas, each with a listing of the significant functions carried out within it. These seven areas and their specific functions are presented as a statement of the basic programs required to operate an academic library in the California State University. They are not meant to be exhaustive of those activities required of staff at each of the nineteen libraries, nor are they meant to imply that all libraries are organized in this fashion. Funding constraints and local campus circumstances yield a unique pattern of staffing demands and personnel resources at each library.

Finally, the taxonomy of functions developed by the Task Force is of necessity a simplification of the programs of a complex organization. Each of the seven broad areas and their corresponding functions is interrelated with the others; staff assigned to these functions do not work in isolation, but rather constantly interact to form a dynamic system which must be sufficiently flexible to accommodate a constantly changing information environment and an evolving academic program.

The seven areas are listed below; the specific functions subsumed under each can be found in Appendix B.

- Collection Development and Management
- Organizing for Use
- Access Services
- Instructional Services
- Reference and Research
- Staff Development
- Administration

Data Gathering: The King Study

The Task Force incorporated its taxonomy of library workload into a Request for Proposal issued in January, 1986 which called for proposals for an in-depth examination of library staffing patterns at a representative sample of three CSU libraries. The Scope of Work contained in the RFP required the contractor to examine staffing needs in each of the seven areas of library operation, and to determine whether or not each is staffed at a level appropriate to perform the area's specific tasks.

To substantiate a finding of an inappropriate level of staffing for a particular function, the Scope of Work required that the contractor provide a written narrative rationale and quantitative

data which will enable translation of the findings to systemwide funding formulas. This requirement was presented as entailing development of a measurable workload standard (per full-time equivalent staff position) for those functions for which such a standard is feasible. For areas of operation for which quantification is not feasible, the Scope of Work specified that detailed qualitative observations be provided to support a finding of inappropriate staffing.

The Scope of Work also required the consultant to address the following specific issues: the effect of campus size on staffing requirements, impact on staffing of the online public access catalog, and the appropriate proportions of professional and support staff.

On the basis of the firm's experience and its proposed study design, the Task Force selected King Research, Inc. of Rockville, Maryland as the contractor to perform the study. Six discrete tasks were contained in the study design, and these tasks were performed over the term of the contract (April 18, 1986 to November 28, 1986):

- Survey of other state university library formulas,
- Data gathering visits to the three libraries studied (CSU San Bernardino, Cal-Poly Pomona, San Francisco State),
- Surveys of library staff activities and work patterns,
- Surveys of library users and faculty,
- Library staff model development,
- Analysis and production of final report containing findings and recommendations.

The outcome of KRI's efforts is a library staffing model which details, in terms of FTE positions, observed and recommended staffing effort for the functional areas defined by the Task Force. (The complete model and explanation of its derivation is contained in Appendix D.) From that model were derived the findings and conclusions presented in the section which follows.

III
FINDINGS

This section summarizes the extensive analysis, findings and recommendations which King Research, Inc. presented at the conclusion of its study of staffing at the libraries at Pomona, San Bernardino, and San Francisco. Also summarized are the conclusions drawn by the Task Force concerning the adequacy of staffing for each of the areas of library operation. Those conclusions and resulting recommendations are based primarily on the data gathered by KRI, but also take into account currently accepted library standards and other information sources. The Task Force focused these data on the information access needs of students and faculty; the outcome of this effort is found in the "Conclusions" section of the discussion of each of the seven functional areas.

In the broadest terms, the data gathered by KRI suggest the need for overall augmentation of library staff in the CSU in two respects: total number of FTE staff and proportion of professional versus support staff. KRI's findings for each of the functional areas are summarized and discussed in this section. A minor departure from the Functional Description should be noted: although part of the Administration area, as defined by the Task Force, the Library Data Processing function has been isolated for separate discussion due to its increased significance in library operations.

The model developed by KRI for determining appropriate staffing in each of the seven functional areas incorporates a number of assumptions concerning standards of service in those areas. Standards are based on user survey data gathered at the three libraries studied, on observations of services at other academic libraries, and on interviews with library staff. The assumptions and resulting standards were critically examined by the Task Force in the process of considering KRI's staffing recommendations; the results of that review are reflected in conclusions drawn by the Task Force. Finally, it should be noted that the current and recommended full-time equivalent positions (FTEs) displayed below represent the total of the staff time devoted to a function at the three study libraries combined; findings for individual libraries are not presented.

Collection Development and Management

Collection Development and Management is central to the mission of the library. It includes all the activities required to select, house and maintain the collections of books, periodicals, serials, maps, documents, archival materials, and slides and other non-print media. The following are the five major functions in this area: selection of library materials, funding of library materials, acquisition of library materials, maintenance of the collection, and material storage.

Two functions in this area were found to be inappropriately staffed: selection of library materials and maintenance of the collection. A third function, material storage, may require additional staff, depending on the type of storage implemented at a library.

Selection of Library Materials

As KRI correctly observes, the selection of materials for purchase is a complex undertaking which requires an understanding of the changing needs of students and faculty, and a thorough knowledge of materials and their availability. As the breadth and complexity of informational materials continue to grow, librarians should increasingly be involved in curriculum development and review committees so that student and faculty needs can be anticipated in an ongoing fashion. In addition, increasing amounts of time should be devoted by librarians in monitoring the array of non-book materials, materials available in multiple formats, and in maintaining contact with publishers and distributors.

A doubling of the current amount of staff time devoted to this function is recommended by KRI and the Task Force, with a greater proportion of staff at the librarian level. For the three libraries studied, current and recommended levels of staffing for selection of library materials are:

	Current FTEs	Recommended FTEs
Librarian	4.16	9.95
Library Assistant	0.91	0.04
Clerical Assistant	0.59	0.56

Maintenance of the Collection

This function includes the various tasks required to keep the collection in good repair and free of materials which are no longer useful; in general terms, it involves ensuring the usefulness of the collection. The level of librarian effort in this area was found to be inadequate, particularly in the development and implementation of programs for preservation of materials, disaster plans, and collection security. Millions of dollars have been invested in CSU library collections, and as these collections grow and increase in age, greater attention must be paid to protecting this investment. Accordingly, an additional half-time equivalent librarian position is recommended by KRI for each library.

	Current FTEs	Recommended FTEs
Librarian	1.16	2.66
Library Assistant	2.52	2.52
Clerical Assistant	1.41	1.41
Student Assistant	9.89	9.89

Material Storage

As the space demands of growing collections outpace the library's ability to house them in the traditional open stack manner, increasing use of compact storage methods and/or other technological alternatives will be required. Because direct access to compact storage is not typically available, libraries which choose to implement this technology will require additional staff to provide access to materials. Further study of staffing needs will be required as libraries implement compact storage programs; none of the three libraries studied had as yet implemented such a program.

Conclusions: Collection Development and Management

Applying the KRI model to systemwide acquisition statistics, the Task Force concludes that an increase of 35.7 FTE positions is warranted for the Collection Development and Management area. The current model unit value of 1.514 multiplied by 2,140,523 items acquired yields a staffing level of 30.3 FTEs.* The recommended unit value of 2.819 minutes derived by KRI yields 56.5 FTE, an increase of 26.2 for selection of library materials. Adding a basic allowance of an additional 9.5 FTEs (0.5 per campus) for maintenance of the collection, the total of 35.7 is obtained.

Organizing for Use

Organizing for use involves the cataloging and preparation for use by students and faculty of all the types of library materials. These include materials contained in the main collection, as well as archives and public documents, non-book media and special collections. Physical processing and file and catalog maintenance are also included in this functional area.

KRI recommends changes in staffing in two functions: cataloging, and file and catalog maintenance. A second study recently conducted on staffing implications of the online public access catalog is also discussed below.

Cataloging

Cataloging of materials — the production of collection listings for public use — was found by KRI to be receiving generally adequate levels of staff effort at the libraries studied. One aspect of this function, however, was found to require a higher proportion of librarian time than was observed. Producing original catalog entries, i.e., entries not available online from the OCLC cataloging utility, requires effort by librarians. Resolution of authority problems,

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*Items acquired figure is based on 1985/86 statistics. Further definition can be found in Appendix D under Model Parameters.

i.e., determination of correct cross-referencing of catalog entries, also must be performed by librarians. KRI thus recommends the following staffing mix for cataloging at the three libraries:

	Current FTEs	Recommended FTEs
Librarian	4.86	7.59
Library Assistant	10.63	8.27
Clerical Assistant	3.89	3.52

File and Catalog Maintenance

KRI found some backlogs of work in the maintenance of the various catalogs and listings of holdings at the libraries studied. A 20 percent increase in student assistant effort is recommended to address this backlog; this increase translates to the following FTE totals:

	Current FTEs	Recommended FTEs
Librarian	0.70	0.85
Library Assistant	6.04	6.04
Clerical Assistant	3.39	3.39
Student Assistant	6.74	8.09

Another study recently conducted for the San Jose State University library by consultant Paul Kantor examines the staffing implications of conversion to an online public access catalog (OLPAC) (Kantor, 1986). OLPAC, when fully implemented, replaces the traditional card catalog and permits students and faculty to search holdings records through a CRT terminal. Kantor studied the CSU pilot OLPAC site, the library at CSU Chico, in an effort to infer staffing impacts for San Jose when the latter converts to OLPAC. Kantor concludes that there will be an increase in professional staff time devoted to managing this automated system.

An OLPAC, of course, does much more than simply replace the card catalog. OLPACs in CSU libraries will create the most significant improvement in student and faculty access to information that can be expected in the next several years. Moreover, successful implementation of OLPACs is essential if CSU campuses are to continue to offer up-to-date library resources and remain competitive in attracting students and faculty to the academic programs those resources support.

In addition, KRI argues that OLPACs and other automated systems offer a more sophisticated approach to information retrieval and research, and consequently they require substantially greater knowledge and skills than traditional approaches.* Increased time must therefore be devoted by librarians and staff to training of students and faculty, as well as to management of the systems. Sections which follow discuss the staffing demands associated with instructional services and library automated systems.

Archives, Public Documents, and Specialized Collections

Demands on staffing arising from these collections vary greatly from library to library, depending upon the size and nature of collections owned. Based on observations at the three libraries studied, however, KRI believes that additional staffing is in order where these collections are substantial. This is an area deemed by the Task Force to be worthy of further study.

Conclusions: Organizing for Use

The Task Force concludes that the staffing mix change recommended by KRI for the cataloging function should be accounted for in library staffing formulas, and it will thus be incorporated into mix of staff recommendations discussed further on in the report.

Task Force also concludes that the appropriate response to staffing needs in the file and catalog maintenance function is not to provide additional staff as recommended by KRI at this time, but rather to provide for staffing needs in the management of automated systems function. As CSU libraries implement online catalog systems and complete the process of integrating OLPACs with other automated systems such as automated circulation (check-out) and automated cataloging, a reconsideration of staffing needs in the file and catalog maintenance function will likely be required. Until such time, the clearest need for additional staff is in the library data processing function. (See page 18 for a discussion of staffing needs in library data processing.)

Access Services

The access services program seeks to provide students, faculty, and staff with access to information in its variety of formats. Those formats include the more traditional books, journals, maps, printed indexes, and microformats, and increasingly involve the use of newer and evolving technologies such as microcomputer storage media and laser disks. Specific functions involved in this area require staffing for planning and budgeting, circulation, reserve materials, interlibrary loan, document delivery, and extended education and off-campus learning programs.

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*A recent survey by the American Council of Learned Societies underscores the importance of instruction in the use of OLPACs; scholars reported that they are not taking full advantage of online catalogs where available and that instruction in OLPAC use was a significant factor in this underuse. (Epp and Segal, 1987)

KRI found staffing levels for circulation to be adequate, but recommended modest increases in librarian and clerical staff for reserve materials, interlibrary loan, and extended education and off-campus learning programs. For the three libraries combined, an additional two FTE staff are recommended for these areas, mostly to provide greater outreach to students and faculty and to enable more effective planning for changing needs in these services. Thus, the current and recommended staffing levels for access services are:

	Current FTEs	Recommended FTEs
Librarian	1.60	2.14
Library Assistant	10.06	10.72
Clerical Assistant	10.55	11.10
Student Assistant	42.01	42.07

Conclusions: Access Services

As in the case of specialized collections, there is a great deal of diversity among CSU libraries in the demands on staff arising from extended education and off-campus learning centers. There is, nevertheless, a general trend towards increasing activity in this sort of learning throughout the CSU, and the Task Force recommends more comprehensive study of the library staffing implications of these. Absent this study, the Task Force does not recommend addressing staffing needs for this function at this time.

Instructional Services

Library instructional services include the formal and informal strategies pursued by libraries to help students and faculty make the most effective use of the full range of available information resources. These resources are increasing in diversity and capabilities, and instructional services in CSU libraries are themselves becoming more diverse.

Instruction on the use of the academic library has always been conducted by librarians. However, enhancing student and faculty knowledge of diverse modes of modern information services provided by academic libraries requires more intensive individual and small group instruction than has been common in the past. Informal instruction at the reference desk, for example, is being increasingly supplanted by individual and small group consultation on the use of sophisticated online searching methods and by lectures on special topics of library use or individual subject areas. In addition, librarians are working with faculty in the main academic subject areas with the intent of tailoring instruction in library resources to the requirements of particular courses.

A great deal of time is also being spent by librarians in developing and maintaining up-to-date instructional materials and programs designed to assist students and faculty in an appropriate degree of self-sufficient use of the library. Self-guided tours, brochures, and instructional programs for microcomputers are among the products designed to supplement personalized instruction in library use.

Of all the areas of library operation, instructional services was found to be most dramatically in need of additional staff; libraries have simply not been able to keep up with the staffing demands associated with ensuring that students and faculty can make full use of the resources available. A lecture in the use of the card catalog and printed indexes is no longer sufficient to meet the average student's needs. The library's investment in the wide range of contemporary information resources demand that instruction be enhanced to ensure the maximum return on that investment.

King Research argues, in fact, that library instructional services are key to imparting skills necessary for lifelong learning and career success. Because recorded knowledge doubles about every six years, King points out, graduating students will have been exposed to only about one-sixth of the knowledge that will be created and made available throughout the remainder of their careers. Knowing how to gain access to and use this knowledge thus becomes a critical talent to be imparted by higher education. For many professions, libraries are an essential part of continued learning on the job.

To provide the level of instructional services and liaison with teaching faculty required in the contemporary academic library, KRI recommends an overall five-fold increase in staffing in this area. An additional 0.5 FTE professional position is recommended for each library to perform the activities associated with instructional program development and evaluation, and FTE staff devoted to the instructional materials function should increase from the existing 0.16 librarian and 0.12 library assistant at the three campuses to 1.25 librarian FTEs and 0.93 library assistant FTEs. For the information instruction function, librarian FTEs should increase from 1.66 to 6.65, library assistant FTEs from 0.45 to 2.29, and clerical assistant FTEs from 0.43 to 1.74 FTEs. Included in these totals are KRI's recommendations for an additional 1.5 librarian and 0.5 library assistant FTE to provide patron training in the use of the OLPAC at the three campuses (at such time it is implemented).

The current and recommended staffing levels for instructional services based on the KRI model for the three libraries studied are:

	FTEs	FTEs
Librarian	1.82	9.50
Library Assistant	0.57	3.25
Clerical Assistant	0.43	1.68

Conclusions: Instructional Services

The Task Force believes that the findings arrived at by KRI make a compelling case for significant enhancement of library staff devoted to the instructional services area. This is clearly an area of service in which CSU libraries are not given the appropriate staff resources to respond to changes in the nature of information and patron demands. It is an area, moreover, which is critical to developing competence in CSU graduates for use of modern methods of accessing diverse information sources.

Applying the KRI model to systemwide enrollment figures, the Task Force finds a need for an additional 36.7 FTEs for the information instruction function. KRI determined the present level of activity in this area to be 9.51 minutes per full-time student, and recommends that this be increased to 27.63 minutes per full-time fall student. Multiplying the values by systemwide figures of 178,581 full-time students (average across terms) and 203,175 full-time fall students, the value of 36.7 is derived.

An additional 12.2 FTE positions are recommended by the Task Force for the library instructional materials function. Using KRI's model values, the systemwide staffing effort devoted to this function currently is estimated to be only 1.8 FTE (0.28 at the three libraries studied). Following KRI's recommendations, this should be increased to 14.0 FTE for the system.

Finally, an additional 9.5 FTEs (0.5 per campus) are recommended by the Task Force for the instructional program development and evaluation function, making the total recommended increase for the Instructional Services area 58.4 FTEs.

While the Task Force is not recommending the addition cf positions for OLPAC at this time, it nevertheless agrees with KRI's finding that additional staff time is required to assist students and faculty in the use of the OLPAC. Appropriate adjustment of staffing levels should occur as OLPACs are brought on line throughout the system, and after campuses have had an opportunity to fully assess the magnitude of the increase in workload as a result of this technology.

Reference and Research

The reference and research program includes two major functions: provision of traditional reference services available at the library reference desk, and offering computer-assisted reference services available from local and remote online databases. It also includes special research services for faculty and advanced students preparing senior projects and theses.

KRI found a serious need for additional librarian time devoted to the computerized database services function. Based on data gathered from library user surveys at the three campuses studied, KRI concluded that demand for this service is not being met due to staffing limitations. Online bibliographic database searching is a relatively new function which is increasingly used by students and faculty, and which CSU libraries have been straining to cover with professional staff. While at the three libraries 1.4 FTE librarians have been devoted to this service, the user surveys indicate the need for a total of 5.9 librarian FTEs. This level of staffing is required to handle the 0.17 online searches per full-time student per year suggested by the surveys.

Another function in the reference and research area, thesis advising and research consultation, is becoming a growing source of pressure on librarians due to increasing research activity by faculty and graduate students at CSU campuses. KRI was not able to quantify this activity in a manner which could be applied across the system; however, it is significant enough

to merit closer examination in the future if libraries are to be able to continue to respond to demands for consultation by researchers. KRI estimates that additional 2.0 librarian total FTEs would be required at the three campuses studied to fully meet these demands.

Including these 2.0 librarian FTEs and the additional FTEs recommended for the database searching function, the current and recommended staffing levels for reference and research are as follows:

	Current FTEs	Recommended FTEs
Librarian	11.2	17.7
Library Assistant	7.2	7.2
Clerical Assistant	5.0	5.0

Conclusions: Reference and Research

The current volume of computerized database searches per full-time equivalent students (FTES) at the three campuses is 0.06 (2,000 searches/36,337 academic year FTES). KRI recommends this be increased to 0.18 per FTES; evidence from survey data shows that actual use of this service is being suppressed by the lack of available professional library staff. On the basis of a determination by the Task Force of an appropriate "standard of service" for the availability of computerized database searching, the Task Force concludes that KRI's recommendation is sound.

KRI determined that the average computerized database search requires 106.8 minutes of staff time. Using the systemwide FTES figure and the current and recommended number of searches per FTES, current and recommended staffing levels of 14.5 and 43.5, respectively, are produced. The recommended increase for the Reference and Research area is thus 29.1 FTE positions.

The Task Force concludes that more information is required to support a recommendation for increased staffing for the thesis advising and research function. It is apparent to the Task Force, however, that instructionally related research by the faculty imposes a significant and growing workload on staffing in this area.

Staff Development

Staff development in the library entails the maintenance and improvement of professional and technical skills and currency of knowledge critical to professional competence in a rapidly changing information environment, and the research and professional association activities involved in contributing to the profession of librarianship. It also involves staff training initiated by the library to ensure appropriate job skills for all staff members.

KRI recommends modest staffing augmentation in two functions in the staff development area, staff training and professional research. Professional development and involvement was found to be adequately provided for. In the training function, KRI found the need for time devoted to training of student assistants, and recommends that they receive the same amount of training as clerical assistants — 57.32 annual hours per FTE. This translates to an additional recommended 2.74 FTE for the three libraries combined.

The research function enables library professional staff to prepare job-related papers, demonstrations and speeches for presentation at professional meetings and for publication in professional literature. KRI found that an average 71.2 annual hours per librarian FTE are devoted to research, and recommends increasing this to 80 hours, or the equivalent of an additional 1.5 FTE for the three campuses.

The current and KRI-recommended staffing levels for staff development activities at the three libraries are:

	Current FTEs	Recommended FTEs
Librarian	7.04	8.54
Library Assistant	7.45	7.46
Clerical Assistant	2.06	2.05
Student Assistant	—	2.74

Conclusions: Staff Development

While finding merit in the analysis and recommendations offered by KRI for the Staff Development area, the Task Force recommends this issue be further examined as a separate issue by the CSU Office of Faculty and Staff Relations. The Task Force is not prepared at this time to make specific recommendations in this area.

Library Data Processing Systems

Because of the rapid change which has occurred in the role of data processing in libraries, and the dramatic effect that change has had on library staff, this report treats the library data processing function separately from the general administration area to which it was assigned in the KRI study. Among the specific activities within this function are: design, implementation and maintenance and documentation of software required to support library operations; monitoring of system performance and working with vendors to correct hardware and software problems; design, review and critique of automation systems proposals originating within the library or from systemwide programs; and reviewing system usage and producing reports.

KRI found that the three libraries studied devote a total of 6.2 FTE to data processing systems, mostly at the library assistant level. This level and quantity of staffing, however, were found to be insufficient to accomplish planning for continuing changes in library technology and for optimally using the systems already in place. KRI thus recommends the addition at each library of an FTE librarian (systems analyst) responsible for planning-related activities and an FTE systems librarian responsible for operations and software. The recommendation is consistent with the findings of the Kantor study mentioned above; for the OLPAC system alone, Kantor found the need for one FTE professional position.

The following are the current and recommended staffing levels at the three libraries for library data processing systems.

	Current FTEs	Recommended FTEs
Librarian	1.20	7.20
Library Assistant	4.11	4.11
Clerical Assistant	0.88	0.88

Conclusions: Library Data Processing Systems

The Task Force concurs with the recommendation by KRI that two FTE positions be added at each library to deal with library data processing planning, implementation, and administration. Funding support for these positions is needed at all nineteen libraries, regardless of size and regardless of level of automation of the various library functions. It is essential that libraries become fully engaged in data processing activities to ensure that students and faculty are continually provided, in the most effective manner, with the full range of information required. Two FTE positions at each are the minimal staffing level to ensure continuing achievement of this objective.

Collegial and Administrative Activities

This area of library operation incorporates the various collegial activities required of library faculty within the library and the broader academic community, and the administrative activities necessary to secure, develop, and coordinate the resources to accomplish the mission of the library. Included is planning and budgeting for personnel, physical facilities, library materials, programs and services, coordinating activities within the library, and ensuring the library's responsiveness to the needs of the academic community. Three broad functions are described for this area: collegial activities, departmental administrative and supervisory activities, and library-wide administrative activities.

These collegial and administrative activities do not just occur in the library's administrative office, but are dispersed across all the functional areas of the library. Planning and budgeting, for example, are an important component of the collection development and management

area. Recognizing this, KRI undertook to measure and convert to FTE units the total library staff effort devoted to collegial and administrative activities in the three libraries studied. This effort totals 29.3 librarian FTEs, 15.7 Library Assistant FTEs, and 22.8 clerical assistant FTEs. Clearly, these activities impose a substantial workload burden on library staff.

From the data gathered by KRI, three types of collegial and administrative activity can be identified: departmental administrative and supervisory activities, collegial activities, and library-wide administrative activities.

Staff-Level Administration and Supervision

Staff-level administration may be seen as the administrative "overhead" time required to perform the services and functions central to each of the areas discussed earlier in this section. The following typify the activities of this function:

- preparation of written communications
- policy development and implementation
- statistical data collection and analysis
- preparation of statistical reports
- training and supervising staff and student workers
- personnel administration (selection, retention, and promotion decision-making)

KRI found that this activity in the three libraries amounted to the equivalent of 29.38 FTE positions (i.e., 52,296 hours). That FTE figure translates to an administrative overhead time requirement equal to 0.144 FTE positions for each FTE unit of time devoted to carrying out a primary function such as reference and research. This level of effort, while seeming high, was not at all excessive in KRI's view. This judgment was based on their analysis of the nature of the workload in the three libraries and on comparison with other libraries they have examined. Indeed, KRI recommended a higher level of effort in this function as displayed below:

	Current FTEs	Recommended FTEs
Librarian	16.94	41.91
Library Assistant	4.90	5.25
Clerical Assistant	7.54	10.43

Collegial Activities

Collegial activities include the various responsibilities assigned to library staff and administrators necessary for cooperative decision-making and consultation in matters of policy. Illustrative of these is the library committee work described in the Functional Description (Appendix C): " . . . organize and support committees of library staff, faculty and student representatives as needed."

KRI measured the amount of time spent on formal and informal committee work in the three libraries and found that librarians spend 60.6 hours per FTE, library assistants spend 12.1 hours, and clerical assistants spend 5.8 hours (KRI considered these amounts to be adequate). Translated to FTE equivalents for the three libraries, KRI tabulated the following levels of effort:

	Current FTEs	Recommended FTEs
Librarian	1.95	1.95
Library Assistant	0.49	0.49
Clerical Assistant	0.18	0.18

Library-Wide Administrative Activities

In addition to the activities listed above, library-wide administrative activities incorporate the administrative functions undertaken by the director, his or her assistants, and other staff members on a library-wide basis. Among these are the following:

- short and long-range planning for strategies to provide for evolving library needs of the academic community
- participation in campus management and systemwide committees and maintaining liaison in involvement with faculty senate and other campus organizations
- participation in regional and other cooperative library groups and establishing external programs for library resource development
- carrying out all activities associated with personnel administration: recruitment, promotion, tenure, and review

Notwithstanding the sizable effort devoted to administrative workload in the three libraries, KRI also found the need for some staff augmentation in the library-wide general administration area. The following activities were found to be in need of additional staff time:

- developing performance standards
- conducting staff reviews and performance evaluations
- assisting in the selection of new staff
- evaluating contractors' proposals
- performing equipment testing and minor repairs

Accounting for these functions, the model used by KRI yields the current and recommended staffing levels shown below for the library-wide administration function. Again, these FTE figures do not represent actual personnel working in library administrative offices in the three libraries studied, but rather the full-time position equivalent of time spent on specific administrative activities.

	Current FTEs	Recommended FTEs
Librarian	12.32	17.76
Library Assistant	10.81	8.57
Clerical Assistant	15.21	14.19
Student Assistant	1.27	5.32

Conclusions: Collegial and Administrative Activities

The Task Force agrees with KRI that collegial and administrative activities pose a legitimate and indeed significant source of workload associated with providing library services. Consequently, it recommends that staffing levels be adjusted appropriately. A reasonable means of accomplishing this is to increase the FTE positions recommended as additions to the functional areas by 0.144 FTE per position added. The 0.144, as mentioned above, is the current administrative time required presently for each FTE-equivalent amount of effort devoted to a functional area. For example, the recommended adjustment of 35.7 FTE in the Collection Development and Management area increases by 5.1 FTE to 40.8 (35.7 x 1.144 = 40.8). Instructional Services increases by 8.4 FTEs, and Reference and Research increases by 4.2. In sum, the Task Force recommends a total increase of 17.7 FTE positions systemwide to account for the administrative workload associated with the three functional areas in need of augmentation.

The Task Force also recommends an increase in staffing for the library-wide administrative activities area for three of the functions cited by KRI as requiring additional time: developing performance standards, conducting staff reviews and evaluations, and performing equipment testing and repairs. The Task Force concludes that the addition of 0.5 FTE at each library will accommodate the first two functions, and an additional 0.5 FTE will accommodate the third.

Summary of Findings

The model developed by KRI and applied to the three CSU libraries studied yields the current and recommended staffing patterns displayed in Tables 1 and 2. Table 1, current staffing, shows a total of 278.94 FTE positions in the three libraries combined. These are "contributed" positions; they represent the total staff time expressed in FTE positions measured by KRI for the functional areas of the libraries. Because of the amount of personal time contributed by staff, the total is somewhat higher than the total positions actually reported filled, 266.62 FTE positions. And this total is in turn higher than the total of 235.3 positions budgeted for the three libraries due to the conversion of positions from one level to another required to cover local staffing needs. The staffing "mix" observed by KRI is 22.7 percent professional and 77.3 percent support. This is close to the budgeted mix of 25 percent professional

and 75 percent support. Again, these FTE figures do not represent "people" but rather the FTE position equivalents of the time spent by librarians, library assistants, clerical assistants, and student assistants on tasks subsumed under the major library functional areas.

As displayed in Table 2, KRI's model shows significant staffing shortfalls in four areas: Collection Development and Management, Instructional Services, Reference and Research, and Library Data Processing. KRI also recommends additional time devoted to staff development and administrative activities, and the model indicates the need for an adjustment to the mix of staff to provide for a higher proportion of professional versus support staff.

Finally, Table 3 shows a comparison of current staffing levels with those recommended by KRI and the Task Force. The Task Force recommendations reflect a commitment to focus on staffing shortfalls which most immediately affect the provision of basic library services to students and faculty; additional support for administrative activities is limited to only that deemed by the Task Force to be necessary to accomplish those basic services. This commitment, and the deferral of staff development recommendations to the Office of Faculty and Staff Relations, accounts for the discrepancy between the Task Force and the KRI recommendations.

It is the judgment of the Task Force that the total of 309.8 FTE positions for the three libraries studied is the minimum threshold of staffing necessary for those libraries to accomplish their basic missions of providing library service to their academic communities. The primary focus of the Task Force has been on recommending a realistic level of basic staff support in areas related to student and faculty access to library information services. There are doubtless additional positions which should be added to the recommended total when such functions as research consultation and the requirements of extended education and off-campus learning are taken into consideration. These functions and others mentioned earlier in this section are recommended as meriting further examination.

And, to repeat a point stressed earlier, libraries find themselves responding to increasing change; the "snapshot" look at staffing patterns and needs presented in this report represent CSU libraries in 1986. The years to come will see more changes in areas such as materials storage and retrieval and library data processing, and issues of staffing will continue to be of concern to library managers, staff and students, and faculty. Continuing, periodic study of library staffing needs will be called for to respond to the dynamic nature of libraries in the CSU.

Table 1

Current Staffing Pattern for Three CSU Libraries (Contributed FTE Positions)

	Librarian	Library Assistant	Clerical Assistant	Student	Totals
Collection Development and Management	5.57	12.71	9.82	21.05	49.15
Organizing for Use	5.61	19.48	9.64	11.47	46.20
Access Services	1.60	10.06	10.55	42.01	64.22
Instructional Services	1.82	0.57	0.43	—	2.82
Reference and Resources	11.20	7.20	1.40	5.0	24.80
Staff Development	7.04	7.45	2.06	—	16.55
Staff Administration Activity	16.94	4.90	7.54	—	29.38
Library Data Processing	1.20	4.11	0.88	—	6.19
General Administration	12.32	10.81	15.21	1.27	39.61
Totals	63.30	77.29	57.53	80.80	278.94
Mix	22.70%	27.70%	20.60%	29.00%	100.00%

Source: King Research, Inc., Study of Library Staffing

Table 2

KRI Recommended Staffing Pattern for Three CSU Libraries (FTE Positions)

	Librarian	Library Assistant	Clerical Assistant	Student	Totals
Collection Development and Management	14.51	11.87	9.79	21.05	57.22
Organizing for Use	8.49	17.14	9.29	12.83	47.75
Access Services	2.14	10.72	11.10	42.07	66.03
Instructional Services	9.54	3.22	1.73	—	14.49
Reference and Research	17.70	7.20	1.40	5.00	31.30
Staff Development	15.80	7.35	2.01	2.74	27.90
Staff Administration Activity	41.91	5.25	10.43		57.59
Library Data Processing	7.20	4.11	0.88	—	12.19
General Administration	24.11	7.35	11.67	5.33	48.46
Totals	141.40	74.21	58.30	89.02	362.93
Mix	39.00%	20.40%	16.10%	24.50%	100.00%

Source: King Research, Inc., Study of Library Staffing

Table 3

Comparison of Task Force Recommendations with Current and KRI-Recommended Staffing Pattern for Three CSU Libraries

(FTE Positions)

	Current*	KRI Recommendation	Task Force Recommendation
Collection Development and Management	49.15	57.22	54.71
Organizing for Use	46.20	47.75	46.20
Access Services	64.22	66.03	64.22
Instructional Services	2.82	14.49	11.73
Reference and Research	24.80	31.30	29.45
Staff Development	16.55	27.91	16.55
Staff Administration Activity	29.38	57.59	32.13
Library Data Processing	6.19	12.19	12.19
General Administration	39.61	48.46	42.61
Totals	278.94	362.93	309.79

*As measured by KRI

IV
THE MIX OF STAFF ISSUE

The preceding section presented findings and conclusions in terms of numbers of FTE positions in CSU libraries. Not explicitly addressed in that section was the "mix of staff" issue, i.e., the proportion of Professional/Management versus Support positions. Implicitly, however, both KRI's findings and the conclusions of the Task Force pertain to mix of staff. Since much of KRI's and the Task Force's recommendations are for Professional/Management level staff, the argument is clear: the currently budgeted proportions do not reflect contemporary staffing needs in CSU libraries.

The separation of these two aspects of staffing — number of positions and level of positions — is dictated by the way formula-based funding works in the CSU. Staffing formulas, such as those used for libraries, first determine the number of FTE positions to be allocated to each library, and then apply a percentage to determine how many of those will be funded at the Professional/Management level and how many at the Support level. The first level, Professional/Management, includes all ranks of librarians and administrators, as well as such professional positions as analyst positions at the professional level. The Support level includes all ranks of library assistants, clerical assistants, and other non-professional positions which occur in libraries.

Prior to 1983, CSU libraries were funded for a proportion of professional positions equal to 33 percent of the total allocated staff. As a result of a review conducted by the Department of Finance in 1982 (DOF, 1982), this proportion was reduced to 25 percent. The fiscal impact of that reduction imposed on the CSU was the loss of $1 million in the 1983/84 budget for libraries. The rationale cited by the DOF audit team was a finding contained in a 1979 CSU study (Office of the Chancellor, 1981) which found that the proportion of actual hours worked by professional personnel equaled 25 percent of the total hours worked. This finding was taken out of context from the 1979 study and did not reflect conclusions or recommendations which arose from it. CSU, in response to the DOF, argued that the de facto reduction in staff resulting from the mix of staff change was not warranted by the DOF interpretation of the 1979 study (Ad Hoc Committee for Library Statistics, 1983).

The information gathered by KRI reinforces CSU's rebuttal to the Department of Finance. KRI evaluated staffing needs by position level in the three study libraries and derived an overall mix of 39 percent professional and 61 percent support (see Table 2). Also reinforcing this position is the application to the CSU of ACRL staffing standards discussed in Section II (see page 6).

ACRL standards address specifically the baseline requirements for professional librarian positions in college libraries. (It should be noted that CSU campuses in many respects qualify more as research universities than as colleges, and that the application of these standards may well underestimate staffing needs in many CSU libraries.) The standards are as follows.

Enrollment, collection size and growth of collection determine the number of librarians required by a college and shall be computed as follows (to be calculated cumulatively):

For each 500, or fraction thereof, FTE students up to 10,000	1 librarian
For each 1,000, or fraction thereof, FTE students above 10,000	1 librarian
For each 100,000 volumes, or fraction thereof, in the collection	1 librarian
For each 5,000 volumes, or fraction thereof, added per year	1 librarian

Libraries which provide 90-100 percent of these formula requirements can, when they are supported by sufficient other staff members, consider themselves at the A level in terms of staff size; those that provide 75-89 percent of these requirements may rate themselves as B; those with 60-74 percent of requirements qualify for a C; and those with 50-59 percent of requirements warrant a D.

CSU libraries fare very poorly when compared to these standards. Systemwide, CSU falls 256 librarian (professional-level) FTE positions short of the standards, and eleven of the nineteen libraries fall into ACRL's "D" category or below. Appendix G displays the application of the standards campus by campus.

In view of the ACRL standards and the findings developed by KRI, the Task Force concludes that the mix of professional staff requires adjustment upward. When KRI's recommendation of 39 percent is adjusted to remove the influence of the findings for the Staff Development and Staff Administrative Activity areas, the original proportion of 33 percent obtains. The Task Force therefore recommends return to the 33 percent Professional/Managerial and 67 percent Support mix which was provided in library staffing formulas prior to 1983.

V

PROPOSED FUNDING FORMULAS FOR LIBRARY STAFFING

At present, funding formulas for CSU library staffing are organized into four "cost centers": Administration, Circulation, Technical Processing and Public Service. The drivers in the formulas are student enrollment, volumes budgeted for acquisition, and faculty count. In addition, some miscellaneous allowances are granted for special collections at particular campuses such as the CSU archives at Dominguez Hills and the DeBellis collection at San Francisco. The formulas and associated definitions are found in Appendix D. As discussed in Section II, the present formulas are considered "interim," and they have not accurately reflected library workload patterns for many years.

The Task Force finds merit in the existing structure of the funding formulas to the extent that they are designed to portray direct relationships between areas of workload and staffing allocations. Besides this conceptual advantage, formulas so designed can assure at least some responsiveness to changes in workload and productivity which might arise due to enrollment changes and changes in patterns of use of library services and materials.

KRI recommends in its report that CSU employ amount of activity measured in libraries as a means of determining required library staff (KRI, p. 24). The use of such "output" measures in funding formulas, KRI suggests, would most accurately measure staffing needs and would be most responsive to changes in workload. While finding merit in this recommendation, the Task Force concludes that there are significant administrative constraints involved in introducing a substantially different means of calculating library staffing needs. These constraints, in the view of the Task Force, militate against adoption of KRI's recommendation.

Moreover, the Task Force finds merit in the nature of the input variables used in the existing formulas on the basis of data gathered in prior studies by the CSU. An extensive study of library functions and workload conducted in 1980 tested through regression analysis a number of input variables as alternatives to full-time equivalent student count. The outcome of that testing was that FTE student count (FTES) correlated as well as any predictive measure with library workload, and, therefore, it was recommended the FTES continue to be used to estimate staffing requirements.

In addition, student enrollment count as an input variable has the advantages of being an independent and reliable statistic, an easily understood concept, and a concept that is already accepted by state funding agencies.

Therefore, building upon prior studies and efforts at formula design, the Task Force does not choose to recommend major revision of the structure of the present formulas. Rather it offers formulas revised to better describe contemporary academic library workload

patterns, and to generate FTE position allocations which arise from the staffing recommendation presented in the preceding sections.

Four cost centers are proposed: Administration, Access Services, Collection Management, and Information Services. The proposed formulas for each of the four are presented below, and the staffing level implications of their application can be found in Appendix F. The tables in Appendix F display the positions generated by the present and the recommended formulas by cost center and by campus. Overall, the Task Force is recommending an augmentation of 198 FTE positions, an increase of 13 percent over the present staffing allocations.

The Administration Cost Center

The recommended formula for this cost center accounts for the staffing recommendations in the Library-Wide Administrative Activities area and the Library Data Processing area. The basic allowance for each campus of 1 position in addition to the director is increased to 4 — 2 additional positions required for the Library Data Processing functions and 1 for General Administration functions. The recommended formula is as follows.*

$Y1 = 1.0$

For all campuses — Library Director

$Y1 = 4.0$ when $0 \leq FT09 \leq 8{,}999$

$Y1 = 5.0$ when $9{,}000 \leq FT09 \leq 19{,}999$

$Y1 = 6.0$ when $FT09 \geq 20{,}000$

For all campuses

Application of this formula systemwide generates a total of 111 FTE positions, an increase of 57 over the current Administration cost center allowance.

The Access Services Cost Center

The Access Services cost center accounts for the various functions associated with circulation of materials, including reserve materials, and interlibrary loan. The formula recommended by the Task Force does not yield an increase in positions over the existing Circulation cost center formula, but adds an element which accounts for the interlibrary loan function not previously recognized in CSU library staffing formulas. It also incorporates revised "workload elements" — the multipliers which estimate annual transactions generated by each FTE student. The revised workload elements reflect current statistics gathered from CSU libraries on circulation and interlibrary loan activity; their derivation can be found in Appendix E.

*See Appendix A for definitions of input elements.

The recommended formula for Access Services, shown below, generates a total of 625 FTE positions, unchanged from the present Circulation formula.

$$Y_2 = \frac{(FT05 + FT08) \times 32}{17{,}340} + \frac{(FT05 + FT08) \times 44}{70{,}000} + \frac{(FT05 + FT08) \times 0.9}{7{,}800}$$

For all campuses

The first expression addresses recorded circulation activity, the second addresses items reshelved but not circulated, and the third addresses interlibrary loan activity. The denominator in the first expression is adjusted from the existing value to yield the recommended total number of positions.

The Collection Management Cost Center

The Collection Management cost center incorporates the Collection Development and Management area and the Organizing for Use area of library operation. A 10 percent increase in this cost center is recommended by the Task Force to account for staffing shortfalls in the Collection Development and Management area. Applying this increase to the 392.1 FTE positions generated systemwide by the present Technical Processing formula, a total recommended staffing of level 432.7 FTEs is obtained, an increase of 40.7 positions.

The present formula is revised to incorporate a basic allowance of 1.0 FTE position for each campus to staff the collection maintenance function, and the "production rate" denominator is decreased to yield the remaining increase in positions. The recommended formula follows.

$$Y_3 = \text{Basic allowance of } 1.0 + \frac{VOLM}{1{,}175}$$

For all campuses

The Information Services Cost Center

The Information Services cost center as proposed includes the Instructional Services and the Reference and Research areas defined by the Task Force. The formulas proposed for this cost center provide for an increase systemwide of 100 FTE, a 23 percent increase for the cost center. As discussed in Section III, an addition of 66.8 is needed in the Instructional Services area, and an increase of 33.3 is required for the Reference and Research functions.

There are two components in the current Public Service cost center formula, one addressing staffing based on student population and one based on faculty population. The rationale for the structure of those formulas is presented in the 1983 analysis produced by the CSU in response to the Department of Finance review (Office of the Chancellor, 1983). On the basis of that rationale, the Task Force is not recommending revision to the structure of the present formulas, but rather to the expressions which reflect library staff workload produced by student and faculty populations.

Staffing Based on Student Population

The formula recommended for student-generated library workload in the Information Cost center contains expressions which yield positions for the undergraduate student population measured in full-time equivalents, and for the graduate student population measured as individuals. Different workload factors (the denominators) are assigned to account for the higher use of library information resources attributed to both full and part-time graduate students.

To achieve the recommended increase in staffing for the Information Services cost center, the workload factors are adjusted downward from their present values: 725 becomes 620 for undergraduate-associated workload, and for graduate student workload, 500 becomes 400. An additional 84.5 FTE positions are generated systemwide from the changes to this formula. The recommended formula is as follows.

$$Y_{4a} = \frac{FT05 + FT08 - FT15}{620} + \frac{IN15}{400}$$

For all campuses

Staffing Based on Faculty Population

Academic year faculty positions for each campus are calculated from the first expression is this formula; the Student/Faculty ratio is divided into the FTE student count. A ratio representing library staff workload is then applied to determine FTE positions. This formula is revised in proportion to the overall revision for this cost center, and the denominator in the ratio changes from 750 to 400. This change yields an additional 15.6 FTE library positions for the system. The recommended formula thus becomes:

$$Y_{4b} = \frac{FT05}{SFR1} + \frac{FT08}{SFR5} \times \frac{1}{400}$$

For all campuses

Summary of Recommended Standards

The library staffing provision embodied in the recommended formulas presented above can be summarized with the following standards.

a. Administration
   1.0 Library Director per campus +
   A basic allowance of 4.0 positions per campus +
   1.0 additional position at 9,000 College Year FTE +
   1.0 additional position at 20,000 College Year FTE

b. Access Services
   1.0 position per 17,340 items charged + 1.0 position per 70,000 items non-charged and reshelved + 1.0 position per 7,800 interlibrary loan transactions. Professional positions comprise 33% of this standard.

c. Collection Management
   Basic allowance of 1.0 position per campus +
   1.0 position for every 1,175 new volumes acquired.
   Professional positions comprise 33% of this standard.

d. Information Services
   1.0 position per 620 Academic Year FTE less Graduate FTE +
   1.0 position per 400 Graduate Individual Students +
   1.0 position per 400 Academic Year Faculty man-years.
   Professional positions comprise 33% of this standard.

VI
CONCLUSIONS

Task Force on Library Staffing recommends an augmentation to CSU library staffing in the amount of 198 FTE positions, 13 percent of the present systemwide total. The Task Force offers this conservative recommendation so that the CSU may focus its immediate attention on areas of library staffing that directly affect students and faculty, areas involving access to information services. The recommended augmentation, the Task Force believes, is a conservative estimate of need based on detailed observations made by King Research, Inc.; it is intended to raise the level of library staffing to the minimum acceptable threshold required to meet the immediate and future information needs of students and faculty. The Task Force further strongly recommends a mix of staff which provides for professional-level positions equal to 33 percent of the total, an increase from the present 25 percent proportion.

Not to implement these recommendations would result in CSU libraries being unable to effectively respond to the growing complexity of modern information services required by a large and diverse student body. In short, continuation of inadequate staffing in CSU libraries, particularly in areas directly related to access to information, will make the achievement of acceptable standards of service virtually impossible. Comparison of present staffing levels with the standards developed by ACRL for *college* libraries starkly illustrates the fact that CSU libraries are presently understaffed. Outdated and understaffed library services short-change the students and faculty who choose to pursue their academic and career goals in the CSU.

Specific consequences of inaction are readily identifiable. In the Collection Management area, librarians will not have the time to ensure that the selection of book and non-book materials from the burgeoning amount available meets curricular needs. This in turn will hamper the library's ability to optimally use the sizable annual investment of state funds in the purchase of new library materials. Lack of manpower in the Library Data Processing area will hinder the implementation and effectiveness of powerful online "authority control" or cross-reference data required for students and faculty to effectively use the capabilities of the computerized public catalog. In the Reference and Research area, staffing shortfalls will prevent students and faculty from fully utilizing the newly available resources of the online bibliographic databases. In the Instructional Services area, inadequate staffing will prevent libraries from responding to the instructional needs of non-traditional and minority students, i.e., to the changing demographics of the CSU student population.

In this context it is important to reiterate a point made earlier in this report: failure to adequately staff its libraries will result in the CSU losing its competitive position in the attraction and retention of faculty and students whose expectations for state-of-the-art information services are continuing to rise.

There are additional areas of change in academic libraries which the Task Force has identified as affecting workload, but for which more specific information is needed to assess

staffing implications. Among these are functions such as compact storage of library materials required by limitations in conventional space for housing collections; extended education and off-campus learning centers; faculty research; instruction in the use of the online catalog; and maintenance of archives, forms and special collections. These areas are recommended by the Task Force for further examination.

Finally, the Task Force concludes that there is a need for additional support for Staff Development activities. The addition of staff to CSU libraries will be of less value in the long term if librarians are not able to grow professionally and to keep abreast of change in their profession and in their areas of academic subject specialization. The Task Force submits this recommendation for consideration by the CSU Office of Faculty and Staff Relations.

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APPENDICES

APPENDIX A

Current Library Staffing Formulas and Definitions

The following are definitions of terminology used in this manual:

The *Academic Year* is defined as comprised of the fall, winter and spring terms.

The *College Year* is defined as comprised of the summer, fall, winter and spring terms.

A *Term* FTE is equivalent to 15 semester or quarter credit units per term.

An *Annual* FTE is equivalent to 30 semester or 45 quarter credit units.

The *Academic Year Annual FTE* is equal to 30 semester credit units or 45 quarter credit units.

The *Summer Quarter Annual FTE* is equal to 45 quarter credit units or 1/3 of summer quarter term FTE.

The *College Year Annual FTE* is equal to the annual FTE for the Academic Year plus the annual FTE for the summer quarter for campuses on year-round operation.

Regular Student indicates an individual student, graduate or undergraduate, enrolled for more than 6 credit units.

Limited Student indicates an individual student, graduate or undergraduate, enrolled for 6 credit units or less.

Academic Year Annual Regular or Limited Students is equal to the *average* of the number of Regular or Limited Students enrolled in the fall, winter and spring terms.

Summer Quarter Annual Regular or Limited Students is equal to 1/3 of the number of Regular or Limited Students enrolled in the summer quarter term.

College Year Annual Regular or Limited Students is equal to the Annual Regular or Limited Students for the Academic Year plus the Annual Regular or Limited Students for the summer quarter for campuses on year-round operation.

Variable	Definition
	FULL-TIME EQUIVALENT STUDENTS (FTE)
FT05	Total Academic Year Annual FTE, *excluding* Calexico off-campus center
FT06	Total Summer Quarter Annual FTE
FT07	Total College Year Annual FTE, *excluding* Calexico off-campus center FT07 = FT05 + FT06
FT08	Academic Year Annual FTE for Calexico off-campus center only (see FT02 for corresponding current year data)
FT09	Total College Year Annual FTE, *including* Calexico off-campus center (see FT01 for corresponding current year data) FT09 = FT05 + FT06 + FT08
FT10	College Year Annual FTE for Agriculture and Natural Resources only (see FT03 for corresponding current year data). Includes the following HEGIS Disciplines: 01011, 01013, 01021, 01031, 01041, 01042, 01051, 01061, 01081, 01091, 01131, 01151, 01161, 01991, 09031
FT12	U.S. non-resident, College Year Annual FTE
FT13	Foreign non-resident, College Year Annual FTE
FT14	College Year Annual FTE for International Programs
FT15	College Year Annual FTE, graduate Instruction
FT16	Total number of units in which deaf students are enrolled at the fall term census date, divided by 15. Students in this definition include only those with hearing limitations which impede the learning process, necessitating the use of interpreters. It does not include hearing-impaired students who either do not use interpreters or use interpreters funded by an outside source.

Variable	Definition
	INDIVIDUAL STUDENTS ENROLLMENT (Continued)
IN15	Average term post-baccalaureate/graduate enrollment, Academic Year, plus one-third of the Summer Term
IN16	Average term enrollment, Academic Year, plus one-third of the Summer Term, of students enrolled in Joint Doctoral programs (see IN02 for corresponding current year data)
IN17	College Year Annual First-Year EOP Students
IN18	College Year Annual Second-Year EOP Students
IN19	College Year Annual Third-Year EOP Students
IN20	College Year Annual Fourth-Year EOP Students
IN21	Total Students enrolled in the special short winter term at Stanislaus only
IN22	College Year Annual Fifth-Year EOP Students
IN23	Total College Year Annual EOP Students Served (only first through fourth-year students are served) IN23 = [(IN17 x 100%) + (IN18 x 75%) + (IN19 x 50%) + (IN20 x 25%) + (IN22 x 0%)]
IN24	Total College Year students who have professionally verified disabilities (as defined by systemwide policy) and need special supportive services for students with disabilities. **
IN25	Average term enrollment, Academic Year, of students enrolled for 5.9 units or less (undergraduate plus post-baccalaureate/ graduate)
IN26	Average term enrollment, Academic Year, of students enrolled for more than 5.9 units 'undergraduate plus post-baccalaureate/ graduate)

Variable	Definition
	STUDENT/FACULTY RATIOS
SFR1	Student/Faculty ratio used to generate the Academic Year faculty positions applicable to the cost center "Instructional Faculty" prior to any transfer to Moss Landing from the participating campuses $SFR1 = \frac{FT05}{\text{Positions in cost center "I.F." + Moss Landing Transfers}}$ Note: 1975-76 transfers to Moss Landing: Hayward 1.5, Fresno 1.5, Sacramento 1.0, San Francisco 1.0, San Jose 5.0
SFR2	Student/Faculty ratio to generate Summer Quarter Faculty positions applicable to the cost center "Instructional Faculty". $SFR2 = \frac{FT06}{\text{Summer Quarter Faculty}}$
SFR3	Student/Faculty Ratio used to generate the faculty positions applicable to the cost center "Joint Doctoral Program" (Ancillary Support) $SFR3 = \frac{IN16}{\text{Faculty in "Joint Doctoral" cost center}}$
SFR5	Student/Faculty ratio used to generate the faculty positions applicable to the cost center "Off-Campus Center" (Ancillary Support) $SFR5 = \frac{FT08}{\text{Faculty in "Off-Campus" cost center}}$

Variable	Definition
	MISCELLANEOUS
ELIG	Number of faculty eligible for sabbatical leave, in accordance with Title V regulations
DIST	The distance factor used in the computation of travel allowances
VOLM	Budgeted annual library volume acquisitions
SAAC	Total number of Student Aid Applications for California (SAACs) received for the budget year
SARS	Total number of Student Aid Reports (SARs) received from students eligible for Pell Grants at the campus for the budget year
GSLA	Total number of applications for Guaranteed Student Loans and Federal Insured Student Loans received for the budget year. Applications for auxiliary loans filed by parents, independent undergraduates, and graduate students are included in this total
ISAS	Total number of applications for institutionally administered scholarships for the budget year. (For campuses which do not use a separate application form, the number of aid applicants whose files are evaluated in a separate scholarship process is used as a proxy.)
DUPR	The total number of student awards (duplicated recipients) for the budget year from the following programs: Pell Grants, NDSL, CSW, SEOG, EOP, Nursing Student Loans, Nursing Scholarships, BIA Grants, Cal Grant A, Cal Grant B, and Institutional Scholarship funds where the disbursement and accounting functions are performed by the Financial Aid Business Office
ACCT	Number of loan accounts remaining unpaid and carried as accounts receivable in the General Ledger as of June 30 of the fiscal year. Includes only those loans for which the collection function is assigned to the Business Office; does not include loans made by Auxiliary Organizations (e.g., foundations or ASB)
DRUG	Total number of items dispensed with and without prescription by the campus pharmacy. An item is considered one line on a prescription form and should be reported as one regardless of the quantity the line represents. Compounded items should be counted as one item regardless of the number of ingredients identified on the prescription form. Samples or "cold-packs" should not be included
VISIT	Total number of predicted individual patient visits for basic student health services (acute and subacute care). An individual patient visit is defined as the retrieval of the medical record with the patient physically present, resulting in both the provision of one or more health services to the patient by a physician, nurse practitioner, or registered nurse and a written entry describing the service(s) in the medical record

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PROGRAM ACADEMIC SUPPORT	
SUBPROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Professional/Management	CODE CC-0-01-4-1-0-1-0000-9910-4

GENERAL STANDARD

a. Administration

1.0 Library Director per campus+
A Basic Allowance of 1.0 position per campus+
1.0 additional position at 9,000 College Year FTE+
1.0 additional position at 20,000 College Year FTE

b. Circulation

1.0 position per 12,920 items charged + 1.0 position per 70,000 items non-charged and reshelved. Professional positions comprise 25% of this standard.

c. Technical Processing

1.0 position for every 1,240 new volumes acquired. Professional positions comprise 25% of this standard.

d. Public Service

1.0 position per 725 Academic Year FTE less Graduate FTE + 1.0 position per 500 Graduate Individual Students + 1.0 position per 750 Academic Year Faculty man-years. Professional positions comprise 25% of this standard.

PROGRAM	ACADEMIC SUPPORT	
SUBPROGRAM	Libraries	PROGRAM CATEGORY
ALLOTMENT	Professional/Management	CODE CC-0-01-4-1-0-1-0000-9910-4

GENERAL FORMULA

$$Y = Y_1 + Y_2 + Y_3 + Y_4 + Y_5 + Y_6 + Y_7 + Y_8 + Y_9$$

where Y_1 = Administration

Y_2 = Circulation

Y_3 = Technical Processing

Y_4 = Public Service

Y_5 = DeBellis Collection

Y_6 = CSU Archives

Y_7 = Labor Archives

Y_8 = Administrative Budget Reductions

Y_9 = Mandated Budget Restrictions

ADMINISTRATION

(1) $Y_1 = 1.0$

For all campuses - Library Director

(2)-(4)

$Y_1 = 1.0$	when	$0 \leq FT09 \leq 8,999$
$Y_1 = 2.0$	when	$9,000 \leq FT09 \leq 19,999$
$Y_1 = 3.0$	when	$FT09 \geq 20,000$

For all campuses

PROGRAM ACADEMIC SUPPORT	
SUB PROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Professional/Management	CODE CC-0-01-4-1-0-1-0000-9910-4

CIRCULATION

(5) $$Y_2 = \left[\frac{(FT05 + FT08) \times 25.7}{12{,}920} + \frac{(FT05 + FT08) \times 42}{70{,}000}\right] \times 25\%$$

For all campuses.

TECHNICAL PROCESSING

(6) $$Y_3 = \left[\frac{VOLM}{1{,}240}\right] \times 25\%$$

For all campuses except 20,40 and 70 **

(7) $$Y_3 = \left[\frac{VOLM}{1{,}425}\right] \times 25\%$$

For campuses 20,40 and 70 only (OLPAC) **

PUBLIC SERVICE

a. Staffing Based on Student Population

(8) $$Y_4 = \left[\frac{FT05 + FT08 - FT15}{725} + \frac{IN15}{500}\right] \times 25\%$$

For all campuses

PROGRAM ACADEMIC SUPPORT	
SUB PROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Professional/Management	CODE CC-0-01-4-1-0-1-0000-9910-4

PUBLIC SERVICE (Continued)

b. Staffing Based on Faculty Population

(9) $$Y_4 = \frac{FTO5}{SFR1} + \frac{FTO8}{SFR5} \times \frac{1}{750} \times 25\%$$

For all campuses

DE BELLIS COLLECTION

(10) $Y_5 = 1.0$ For campus 75 only

CSU ARCHIVES

(11) $Y_6 = 0.5$ For campus 55 only

LABOR ARCHIVES

(12) $Y_7 = 1.0$ For campus 75 only

PROGRAM ACADEMIC SUPPORT	
SUBPROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Professional/Management	CODE CC-0-01-4-1-0-1-0000-9910-4

ADMINISTRATIVE BUDGET REDUCTIONS

(13)-(16)

$Y_8 = -0.2$ For campus 45 only

$Y_8 = -0.4$ For campus 65 only

$Y_8 = -0.5$ For campus 25 only

$Y_8 = -1.0$ For campuses 60 and 80 only

1981/83 Legislative Reduction to Campus Administration

MANDATED BUDGET REDUCTIONS

(17) $Y_9 = -1.0$ For campus 50 only: Administrative Project Team Recommendations (1979-80)

PROGRAM ACADEMIC SUPPORT	
SUB PROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Support Staff	CODE CC-0-01-4-1-0-1-0000-9910-6

GENERAL STANDARD

a. Administration

A Basic Allowance of 1.0 clerical position for the Library Director +0.5 position per other professional position budgeted for administration.

b. Circulation

1.0 position per 12,920 items charged + 1.0 position per 70,000 items non-charged and reshelved. Support staff positions comprise 75% of this standard.

c. Technical Processing

1.0 position for every 1,240 new volumes acquired. Support staff positions comprise 75% of this standard.

d. Public Service

1.0 position per 725 Academic Year FTE less Graduate FTE+ 1.0 position per 500 Graduate Individual Students + 1.0 position per 750 Academic Year Faculty position. Support staff positions comprise 75% of this standard.

GENERAL FORMULA

$$Y = Y_1 + Y_2 + Y_3 + Y_4 + Y_5 + Y_s$$

where Y_1 = Administration

Y_2 = Circulation

Y_3 = Technical Processing

Y_4 = Public Service

Y_5 = DeBellis Collection

Y_s = Special Allowances

PROGRAM: ACADEMIC SUPPORT	
SUB PROGRAM: Libraries	PROGRAM CATEGORY
ALLOTMENT: Support Staff	CODE: CC-0-01-4-1-0-1-0000-9910-6

ADMINISTRATION

(1)-(3)

$Y_1 = 1.5$ when $0 \leq FT09 \leq 8{,}999$

$Y_1 = 2.0$ when $9{,}000 \leq FT09 \leq 19{,}999$

$Y_1 = 2.5$ when $FT09 \geq 20{,}000$

For all campuses

CIRCULATION

(4)

$$Y_2 = \frac{(FT05 + FT08) \times 25.7}{12{,}920} + \frac{(FT05 + FT08) \times 42}{70{,}000} \times 75\ \%$$

For all campuses

PROGRAM ACADEMIC SUPPORT	
SUBPROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Support Staff	CODE CC-0-01-4-1-0-1-0000-9910-6

TECHNICAL PROCESSING

(5) $$Y_3 = \left[\frac{VOLM}{1,240}\right] \times 75\%$$

** For all campuses except 20,40 and 70

(6) $$Y_3 = \left[\frac{VOLM}{1,425}\right] \times 75\%$$

** For campuses 20,40 and 70 only (OLPAC)

PUBLIC SERVICE

a. Staffing Based on Student Population

(7) $$Y_4 = \left[\frac{FTO5 + FTO8 - FT15}{725} + \frac{IN15}{500}\right] \times 75\%$$

For all campuses

b. Staffing Based on Faculty Population

(8) $$Y_4 = \left[\frac{FTO5}{SFR1} + \frac{FTO8}{SFR5}\right] \times \frac{1}{750} \times 75\%$$

For all campuses

PROGRAM ACADEMIC SUPPORT	
SUBPROGRAM Libraries	PROGRAM CATEGORY
ALLOTMENT Support Staff	CODE CC-0-01-4-1-0-1-0000-9910-6

DE BELLIS COLLECTION

(9) $Y_5 = 2.0$

For campus 75 only

SPECIAL ALLOWANCES

(10) $Y_1 = -0.5$

For campus 65 only: Transfer to Computing Support

(11) $Y_2 = -1.0$

For campus 80 only: Transfer to Computing Support

APPENDIX B

Chronology of Formularized Funding For CSU Libraries

Chronology of Formularized Funding for CSU Library Staffing

1966 — Funding formulas recommended by Chancellor's Office Library Development Committee were implemented. Driven by full-time equivalent student (FTES) count and volumes acquired, a formula was established for each of three areas of library operations: Public Services, Technical Processes, and Administration.

1972 — Formulas were revised as a result of a 1970 *Report on the Development of the California State College Libraries: A Study of Staffing and Budgeting Problems*. Greater complexity was built into the formulas to reflect a number of variables which influence library workload.

1974-75 — Formulas were reviewed by a systemwide committee appointed by the Chancellor. The committee's report, which recommended a formula based on workload factors and work measurement, was never formally acted on.

1976 — "Interim" staffing formulas were implemented by the Chancellor's Office. Modeled after those suggested in the 1970 report, the formulas continued the existing level of funding. Except for changes in workload and productivity elements required by the DOF, these formulas are still in use.

1978 — Technical processing formula was changed from one position for every 950 volumes acquired to one for every 1,000 acquired.

1979 — Technical processing formula was changed again to one position for every 1,060 volumes acquired. These changes were made to reduce positions in return for funding of the automation of cataloging activities.

1980 — Functional analysis study of library staffing was conducted. Specific tasks were defined, correlational analyses of workload and formula input measure were conducted, and it was concluded that FTES and volumes acquired remain the most accurate measures of staffing need. A variety of recommendations were made concerning such matters as revising formula cost centers; most of the recommendations were not implemented.

1982 — Department of Finance report on library staffing was produced which resulted in position reductions in all cost centers: a total of 152.1 FTE positions were reduced systemwide in addition to a $1 million unformularized reduction from "mix of staff" (position costing) adjustments.

1983 — Validity analysis of the Circulation and Public Service staffing formulas was submitted to the Legislature; 31.4 FTE professional-level positions were restored in the 1984/85 budget as a result of errors shown in the DOF analyses.

1985 — Agreement was reached between the CSU and the Department of Finance on the terms of a "payback model" for partial state funding of online public access catalog systems (OLPACs). CSU libraries will be required to yield a total of 50.2 FTE positions systemwide under the agreement.

APPENDIX C

A Functional Description of CSU Library Staffing Workload

Collection Development and Management

Collection development and management is central to the mission of the library. It includes all the activities required to select, house and maintain the collections of books, periodicals, serials, slides, maps, documents, archival materials, and other non-print media.

Funding of Library Materials

- prepare annual budget request
- negotiate allocation of funds in support of campus curriculum, research and service needs
- justify and request additional funds when appropriate
- seek grants and other extramural funds to supplement state funding
- monitor materials budget and expend funds in timely manner

Selection of Library Materials

- in consultation with faculty, establish policies and develop profiles which guide selection of materials
- develop procedures to guide the interaction between librarians and instructional faculty
- establish and maintain contacts with faculty to be responsive to instructional and research needs
- participate in campus curriculum development committees
- monitor changes in curriculum, research and services programs
- maintain awareness of developments in fields of scholarship and in publishing
- develop and monitor approval plans
- select for acquisition monographs, serials, periodicals, reference and non-book materials
- evaluate gifts and select for inclusion in the collection
- enter into cooperative purchasing plans and resource sharing arrangements as appropriate

Acquisition of Library Materials

- design and monitor work flow to acquire material and expend funds
- hire, train and supervise staff
- prepare budget requests for staff, equipment and supplies
- prepare periodic reports as needed for collection development librarians and instructional faculty
- work with systems specialists to acquire, develop, and maintain automated systems
- prepare orders, verify bibliographic entries, check for duplication, assign discipline codes, funds and vendors
- maintain files: standing orders, blanket orders and vendor files
- request free materials
- receive library materials, unpack, match invoices with materials, return defective materials, originate credit memos, solve problems and correspond with vendors as necessary
- initiate claims, check renewal lists
- receive and acknowledge gifts, prepare for review and selection by specialists and process for inclusion in the collection
- maintain detailed periodical and serials records as individual issues are received
- maintain accounts, record encumbrances, process invoices for payment in accordance with state and university practices
- make records available to public service and other librarians as needed
- distribute all materials for further processing as necessary

Maintenance of the Collection

- develop policies and procedures for evaluating the use of the collection
- conduct collection assessments, including user studies, and review publications for currency, completeness, processing errors
- establish methods for improving access to the collection and for enhancing its usefulness

- prepare program review documents for academic program review and accreditation visits
- support bindery program for periodicals, serials, theses and monographic works as needed
- establish and maintain appropriate repair, inventorying preservation and conservation programs for all library materials
- develop policies, procedures and guidelines for deselection
- select material to be removed from the collection in consultation with instructional faculty
- remove material, change all necessary files, and dispose of material in accordance with state and university standards

Material Storage

- in consultation with faculty, develop policies and criteria to guide decisions to remove materials to storage if necessary
- identify individual items for transfer to compact or other storage using surveys and other criteria
- transfer items to storage
- update databases and catalog to reflect storage

Organizing for Use

Cataloging and preparing all the types of library materials for use by students and faculty are included in this section.

Cataloging for Main Collection

- establish policies and procedures which prescribe acceptable cataloging standards and which guide work flow
- catalog titles through online OCLC database searching and printout records in need of modification
- modify as needed OCLC catalog copy and provide input to OCLC database as appropriate

- create original catalog copy (entries, cross references, series information and subject headings) for works for which no OCLC data are available and input into OCLC database
- review and correct as necessary substandard OCLC cooperative cataloging
- reclassify or otherwise modify as necessary the record on an item already part of the collection
- revise manually or through OCLC the library holdings record to reflect addition of materials

File and Catalog Maintenance

- maintain library card catalogs (main author/title and subject catalog, music score catalog, shelflists, etc.) by filing new and revised records, replacing worn or missing cards and other activities as required
- maintain serials and periodicals records by updating to reflect holdings, new cataloging or recataloging
- maintain machine-readable cataloging (MARC) database by updating it to reflect additions and removals from collection and by performing editing and other database maintenance activities as needed
- maintain authority files by reviewing and revising as necessary entries for subjects, series, personal and corporate names, and uniform titles and "see also" references
- maintain local union list of serials and periodicals to reflect current holdings and prepare records for systemwide union list

Archives, Public Documents and Specialized Collections

- organize and catalog for public use archival materials, specialized collections, and public documents

Collections in Non-book Media

- organize and catalog for public use collections in media such as microform, microcomputer diskette, video and audio cassette

Access Services

The access services program seeks to provide students, faculty and staff with access to information in its variety of formats. Those formats include the more traditional books, journals, maps, printed indexes and microformats, and increasingly involve the use of newer and evolving technologies such as microcomputer storage media and laser disks.

Planning and Budgeting

- in consultation with faculty and staff, plan for short and long-term patron needs and changes in information access technology
- develop budget requests which anticipate hardware and other costs associated with new access technology
- coordinate with campus computer center and other campus administrators in developing telecommunications systems and other means of accessing computerized information
- monitor and participate in systemwide and cooperative access activities such as the online public access catalog implementation project

Circulation

- provide services at circulation desk: charge out and receive materials, process hold and search requests, process recall requests, issue library cards, answer questions, and maintain exit control
- maintain automated circulation control system by preparing and entering circulation transaction data, editing for errors, and arranging for hardware and software maintenance as required
- issue and process bills and notices for materials overdue or returned late and for lost or damaged items, search when necessary for overdue items and resolve bills and notices contested by patron
- receive and account for payment of fines and bills in accordance with standard campus and state practices
- maintain stacks: reshelve returned material, shift material and check for correct order as required, shelve new items

Reserve Materials

- consult with faculty to determine reserve needs and order material from stacks
- charge out and receive returned reserve materials
- maintain reserve collection by adding and withdrawing items and by stack reading and searching reserve materials

Interlibrary Loan

- establish policy and procedures for interlibrary loan and establish cooperative agreements with other institutions
- process borrowing requests: verify sources and locations, prepare and send requests, receive material and notify patron, charge out and receive when due
- process lending requests: receive requests and verify availability, locate and retrieve material, package and ship, send overdue notices as needed, receive returned material and clear records

Document Delivery

- develop and carry out procedures for delivering documents requested by patrons from computer-assisted reference services or other technologically based programs

Extended Education and Off-campus Learning Programs

- develop and carry out strategies for meeting access needs of students and faculty in non-traditional academic programs and off-campus sites such as learning centers.

Instructional Services

Library instructional services include the formal and informal strategies pursued by libraries to help students and faculty make the most effective use of the full range of available information resources.

Instructional Program Development and Evaluation

- in consultation with faculty and academic program administrators, design and implement a comprehensive instructional program in information literacy including use of the library and research skills

- monitor and evaluate the effectiveness of this instructional program, and update curricula to respond to changing needs arising from the campus academic program

Library Instructional Materials

- prepare and disseminate variety of informational materials to assist students and faculty in the use of the library

Information Instruction

- develop and conduct basic orientation programs in use of the library's resources
- prepare and deliver subject-oriented lectures and lectures on topics in library use
- prepare, on request of faculty, manual or computer-produced bibliographies and other course-related materials
- conduct intermediate and advanced-level instruction in use of research materials and resources such as online reference services for upper division and graduate students
- develop and prepare programs for instruction in end-user computer searching

Reference and Research

The reference and research program includes two major functions: provision of traditional reference services available at the library reference desk, and offering computer-assisted reference services available from local and remote online databases. It also includes special research services for advanced students preparing senior projects and theses.

Reference and Information Desk Services

- provide assistance to patrons in locating materials on subjects of interest or materials with a specific author or title
- provide assistance to patrons in the use of indexes and other bibliographic sources to locate articles or books
- provide library and campus directional information to patrons
- assist patrons in locating specific items of information such as statistical or biographical data
- provide special services such as follow-up reference and consultative reference service

Photocopy Service

- maintain photocopy machines and assist patrons in use of service

Thesis Advising and Research Consultation

- provide assistance to advanced students in preparation of senior projects, master's theses, and joint doctoral dissertations
- prepare as requested by faculty, manual or computer-produced bibliographies and other teaching materials
- consult with students and faculty regarding research methods, availability of materials, and links to off-campus resources

Media Services

- provide directional reference and search assistance for video, audio and other non-book materials collections
- provide directional reference and search assistance in use of the microform collection

Computerized Database Services

- after determining patron requirements, formulate search strategies and conduct bibliographic searches of online databases
- provide patron assistance in use of local and end-user databases not requiring the librarian as intermediary
- evaluate user response to online services and publicize their availability

Staff Development

Staff development in the library entails the maintenance and improvement of professional and technical skills and currency of knowledge critical to professional competence in a rapidly changing information environment, and the research and professional association activities involved in contributing to the profession of librarianship. It also involves staff training initiated by the library to ensure appropriate job skills for all staff members.

Staff Training

- conduct training activities for professional staff, para-professional staff, and student assistants to ensure skill levels as needed

Professional Development and Involvement

- encourage and enable professional staff to read and study professional and technical literature to keep current in professional field, to participate in workshops and other professional organization activities, and to update skills to keep pace with evolving information retrieval techniques

Research

- encourage and enable professional staff to prepare job-related papers, demonstrations and speeches for presentation at professional meetings or for publication in professional literature

Administration

The library administration program seeks to secure, develop and coordinate the resources necessary to accomplish the mission of the library. This program includes planning and budgeting for personnel, physical facilities, library materials, programs and services, coordinating activities within the library and ensuring the library's responsiveness to the needs of the academic community.

General Administration

- plan short-range and long-range operational strategies to provide for evolving library needs of the academic community
- supervise and evaluate activities of library professional and support staff and develop and implement management tools
- participate in campus management and systemwide committees and task forces and maintain liaison and involvement as appropriate with faculty senate and other campus organizations
- participate in regional and other cooperative library groups
- establish external programs for library resource development
- coordinate the library's public relations activities
- carry out all activities associated with personnel administration: recruitment, promotion, tenure and review

Administrative Support

- maintain secretarial support for library operations
- maintain physical plant, library equipment and security

Library Committees and Departmental Administration

- organize and support committees of library staff, faculty and student representatives as needed
- carry out administrative activities associated with any departments or departmentally constituted committees or groups

Accounting

- maintain library accounting, ordering and payment systems
- administer student assistant payroll including processing of time sheets and monitoring monies in work study entitlements

Library Data Processing Systems

- perform library data systems analysis as required: design, review and critique automation systems proposals originating within the library or from systemwide programs
- carry out software maintenance as required for automated library systems including debugging and modification to software to meet library's needs and producing documentation
- in consultation with campus data center personnel, design and implement new software to support library operations

APPENDIX D

Mathematical Model Used by King Research, Inc.

PART I
LIBRARY STAFFING MODEL

A.1 Overview of the Model

A model of library staffing has been developed in such a way that staffing projections can be made by applying various input parameters for each library to which the model is being applied. The basic model is organized in the following way:

- General Activities
- Technical Services
  - Collection Development and Management
  - Ordering and Order Control
  - Materials Receiving/Mail Processing
  - Receipt Processing
  - Copy Cataloging
  - Upgraded and Original Cataloging
  - Catalog Maintenance
  - Physical Processing
  - Periodicals Binding
  - Invoice Processing
- User Services
  - Reference/Readers' Advisory Services
  - Online Database Searching
  - Circulation
  - Reshelving and Stack Maintenance
  - Interlibrary Borrowing
  - Interlibrary Lending
- Management and Administration
  - Management
  - Administrative Support
  - Automated Systems Administration
- Instructional Activities

For each of the main and sub-categories of the model there are several activities listed. The model has, therefore, been developed at the most detailed level (the discrete activities). In this way the activities can be aggregated into any categorization, such as the CSU Taxonomy of Library Functions as demonstrated in Part II of this appendix.

\.1.1 Model Development

The model was built by taking observations of the amount of time spent on discrete activities. These observations were made from two different perspectives. First we actually observed performance of the activities for a sample period (bottom-up perspective). Second, library staff estimated the amount or proportion of time spent on the activities over a one-year period (top-down perspective). This second perspective helped to overcome the problems associated with sample observations that occur at only one point in a longer cycle of activity (in this instance, the academic year). From these observations we were able to calculate unit times per discrete activity.

As an example, consider the copy cataloging function where we observed the average unit times for each activity to be:

5.28 minutes per title - searching OCLC,
5.42 minutes per title - reviewing OCLC copy,
6.51 minutes per title - accepting OCLC copy,
1.23 minutes per title - printing labels,

and so on.

The first step in building the model was to convert the average per title unit times into average per item unit times. The reason why this was necessary is that the annual CSU library statistics do not include title data for gift books, bound periodicals, withdrawals, microforms, juvenile works, textbooks, government publications, visual non-print items, and sound recordings. For these types of materials only volume/item/piece data are presented.

From studies of academic libraries in state-supported institutes in the U.S., we were able to derive volume-to-title ratios for different types of materials as follows:

Books	1.99 volumes per title
Serials	6.11 volumes per title
Microforms	5.97 volumes per title
Government documents	4.32 volumes per title
Other	10.46 volumes per title

We applied these ratios to the total numbers of each of the types of materials held by the three CSU libraries studied to derive a weighted overall volume-to-title ratio:

Overall	4.93 volumes per title

This ratio was then applied to the unit times to yield the following average unit per item times:

1.07 minutes per item - searching OCLC
1.10 minutes per item - reviewing OCLC copy
1.32 minutes per item - accepting OCLC copy
0.25 minutes per item - printing labels

Each of these unit times applies to a separate activity level. For example, the 1.07 minutes per item is associated with the total number of items for which OCLC was searched; the 1.10 minutes per item is associated with the total number of items for which OCLC copy was found and reviewed; and so on. Over the full range of 200 plus activities, this would require gathering a great deal of highly specific data for each library.

The main purpose of a model is to use a minimum set of model parameters (or workload estimates). Furthermore, these model parameters must be readily available. In this study the model parameters are derived from the annual CSU Library Statistics report. In order to develop the model from a set of unit times associated with an individual item processed

for a discrete activity, to a set of unit times associated with a more generic model parameter, a series of detailed assumptions were developed. The assumptions were developed from the observations made in the three libraries studied, from discussions with staff at the three libraries, and from our experience in other similar libraries.

The following assumptions relate to the searching of OCLC:

- OCLC is searched for all items ordered, plus 6% of the items acquired but not ordered.
- 70% of the items acquired are actually ordered; 30% of the items acquired are on approvals, gifts, etc.
- Therefore, OCLC is searched for 72% of the items acquired (70% of the itmes acquired + 6% of the 30% of the items acquired = 72%)

The 1.07 minutes per item searched on OCLC translates into 0.77 minutes per item acquired (1.07 x 0.72).

The total unit time spent on searching OCLC per item acquired by the library can be allocated across personnel categories. To do this, we observed the proportion of time spent on searching OCLC for copy cataloging by each category of staff as follows:

- Librarian 15.9%
- Library Assistant 62.4%
- Clerical Assistant 21.7%

Applying these percentages to the 0.77 minutes per item acquired resulted in the following unit times per personnel category:

- Librarian 0.122 minutes per item acquired
- Library Assistant 0.480 minutes per item acquired
- Clerical Assistant 0.167 minutes per item acquired

These are the adjusted unit times displayed in the last column of Activity #67, Search OCLC, on page A-21.

The set of model parameters for the model are described below, together with their values for the three libraries studied.

A.1.2 Model Parameters

The following set of model parameters were used in developing the library staffing model can be found in the CSU annual Library Statistics report. The codes associated with each parameter (A7, B6, etc.) are references to the data values presented in the report.

MODEL PARAMETERS

	For the 3 Libraries Studied
Items Acquired	
(B4,B5,B11,B12,B13,B14,B15,B16,B17,B32 B35,C5,C10)	399,653
Items Acquired that are processed through automated systems	
(Items Acquired x proportion of items processed through an automated acquisitons system)	109,481
Items Acquired that are manually processed	
(Items acquired x proportion items processed through a manual acquisitions system)	290,172
Serial/Periodical Items Acquired	
(C5,C10,B5)	103,655

MODEL PARAMETERS

	For the 3 Libraries Studied
Items Withdrawn (B7,B33)	20,778
Periodical Subscriptions (C5)	10,135
Item Shelved/Reshelved (Items acquired, items circulated, items used in-house, ILLs filled)	3,947,223
Items in Collection (A4,A7,A8,A9,A10,A11,A26,A28)	4,694,177
Items Circulated (G3,G5,G6,G7)	1,300,004
In-House Use (G4)	2,2,733
ILB Requests Sent (G8)	9,494
ILB Requests Filled (G9)	6,773
ILL Requests Received (G13)	16,531
ILL Request Filled (G14)	10,833
Reference Requests (G18,G19)	990,619
Full-Time Students (Fall Statistics)	29,768
Full-Time Students (Average across all terms)	28,555

MODEL PARAMETERS

	For the 3 Libraries Studied
Directional/Informational Requests (G19)	805,298
In-Depth Requests (G18)	185,321
Online Searches (G25)	1,999
Current Library Staff FTEs (from libraries)	266.02
Current FTE Librarians (from libraries)	57.34
Current FTE Library Assistants (from libraries)	71.63
Current FTE Clerical Assistants (from libraries)	56.26
Current FTE Student Assistants (E1+E2)/1,780	80.80
Number of faculty members	3,698
Number of research faculty FTEs	66
Number of Libraries	3

A.2 Model Description

A.2.1 GENERAL ACTIVITIES

General Activities include those activities that most library staff perform at times, but which are not usually their primary activities. For example, such activities include writing memos and letters, preparing manuals and policy documents, attending staff meetings, recording statistics, and so on. The amount of time spent on these types of activities is a function of the number of staff in a library. Consequently, the model projects the total annual hours spent by each FTE staff member on each activity.

GENERAL ACTIVITIES	Annual Hours Per FTE		
	Librarian	Library Assistant	Clerical Assistant
1. Write memos and letters	47.6	12.5	44.2
2. Prepare manuals of procedures and policy documents	58.3	9.56	8.38
3. Prepare written reports	33.5	6.71	18.1
4. Work with staff of other units/departments to resolve joint operational problems	27.0	16.1	26.5
5. Attend and participate in staff meetings	54.3	18.2	39.8
6. Brief visitors on library operations	4.7	10.3	13.4
7. Train and supervise staff and student workers	33.47	155.12	53.5
8. Write job descriptions	10.0	3.82	4.80
9. Develop performance standards	6.78	2.57	2.26
10. Conduct staff reviews and performance evaluations	16.8	3.20	3.73
11. Assist in the selection of new staff	18.4	6.65	13.9
12. Record statistics of work performed	6.53	13.2	38.8
13. Prepare statistical reports	8.66	12.9	16.4
14. Attend professional meetings	42.8	11.3	3.3
15. Develop professional contacts	11.8	3.6	1.7
16. Assess performance of existing equipment/systems	5.9	6.8	6.9

GENERAL ACTIVITIES	Annual Hours Per FTE		
	Librarian	Library Assistant	Clerical Assistant
17. Investigate capabilities of other equipment/systems	4.5	3.8	4.2
18. Recommend acquisition of new/additional equipment/systems	3.6	2.9	2.9
19. Train and supervise staff in operation and in-house maintenance of equipment/systems	3.9	10.7	6.9
20. Gather information for maintenance contracts on equipment/systems	0.8	0.3	2.0
21. Write statements of work for contract proposals	1.5	0.1	0.8
22. Evaluate contractors' proposals	0.6	0.1	—
23. Write articles for professional journals/newsletters	30.4	6.2	2.1
24. Make recommendations for improvement in internal library operations	7.91	2.82	5.46
25. Make recommendations for improvement in services to users	8.53	2.01	2.53
26. Participate in library committees	29.7	8.7	5.2
27. Participate in university committees	30.9	3.4	0.6
28. Participate in external professional committees (e.g., CLA)	13.1	1.2	—
29. Read professional literature	35.40	2.82	0.76
30. Perform professional research	40.80	—	—
31. Other general activities	7.68	2.83	19.9

A.2.2 TECHNICAL SERVICES

A.2.2.1 Collection Development and Management

Collection Development and Management includes activities relating to the selection of materials to be added or withdrawn from the collection.

Assumptions made in building this portion of the model were:

- 70% of items acquired are actually ordered;
- 30% of items acquired are on-approvals, gifts, etc.

The unit of measurement for selecting citations and selecting materials is titles or items ordered. The observed values for these activities were adjusted (or normalized) to the input parameter, items acquired, by applying the above assumptions.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant
Collection Development and Management						
32. Review citations	Included in Activity 33					
33. Select citations	5.02	1.02	per title/item ordered	0.643	0.072	—
				mins. per item acquired		
34. Review materials	Included in Activity 35					
35. Select materials	4.14	0.84	per title/item ordered	0.422	0.158	0.010
				mins. per item acquired		
36. Review records for withdrawal	Included in Activity 39					
37. Select records for withdrawal	Included in Activity 39					
38. Review materials for withdrawal	Included in Activity 39					
39. Select materials for withdrawal	24.84	5.04	per title/item withdrawn	3.101	1.941	—
				mins. per item withdrawn		
40. Other collection development and management	1.43	0.29	per title/item ordered	0.048	0.012	0.149
				mins. per item acquired		

A.2.2.2 Ordering and Order Control

Ordering and Order Control includes those activities relating to the ordering of materials for the library and the production and handling of all associated documentation.

Assumptions made in building this portion of the model were:

- Pre-order searching is performed for 90% of the items ordered; this translates into 63% of the items acquired (90% of 70% of the items acquired). This is because we assumed that pre-order searching was not performed for second/replacement copies.

- Automated pre-order searching is performed for 78% of the items for which pre-order searching is performed; this translates into 49% of the items acquired.

- Manual pre-order searching is performed for 22% of the items for which pre-order searching is performed; this translates into 14% of the items acquired.

- 3.5% of all materials ordered are claimed; this translates into 2% of the items acquired.

- 6% of all orders are cancelled; this translates into 4.2% of the items acquired.

As before, all the observed unit times were adjusted to the number of items acquired by applying the above assumptions.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.)			
				Librarian	Library Assistant	Clerical Assistant	Student Assistant
Ordering and Order Control							
41. Automated pre-order search	3.25	0.66	per title/item searched automatically	0.0071	0.252	0.021	0.042
				mins. per item acquired			
42. Manual pre-order search	11.29	2.29	per title/item searched manually	0.012	0.122	0.062	0.124
				mins. per item acquired			
43. Prepare order records	3.99	0.81	per title/item ordered	0.0054	0.232	0.109	0.218
				mins. per item acquired			
44. Prepare related documentation	1.63	0.33	per title/item ordered	0.0030	0.024	0.068	0.136
				mins. per item acquired			
45. Send orders	1.58	0.32	per title/item ordered	—	0.061	0.055	0.110
				mins. per item acquired			
46. File orders	1.73	0.35	per title/item ordered	0.0015	0.045	0.065	0.130
				mins. per item acquired			
47. Claim ordered materials	61.63	12.50	per title/item claimed	0.0020	0.065	0.061	0.122
				mins. per item acquired			
48. Cancel orders	8.43	1.71	per title/item cancelled	—	0.022	0.034	0.068
				mins. per item acquired			
49. Other ordering and order control	0.29	0.058	per title/item ordered	0.016	0.035	0.0069	0.014
				mins. per item acquired			

A.2.2.3 Materials Receiving/Mail Processing

Materials Receiving/Mail Processing includes those activities associated with the receiving, packing, unpacking, sorting and delivering of library materials, equipment, furniture and mail.

Assumptions made in building this portion of the model were:

- The number of items received by the library includes 100% of the items acquired, plus an additional 20% of the non-ordered items acquired; this translates into 106% of the items acquired.

- Materials received from a commercial binder are not processed by the materials receiving/mail processing unit.

- Invoices and packing slips are annotated for 100% of the items ordered, plus 80% of the non-ordered materials; this translates into 94% of the items acquired.

- The number of items to be mailed/shipped includes 100% of filled ILBs, 100% of filled ILLs, and 20% of items acquired but not ordered; this translates into 10% of items acquired.

- Materials to be sent to a commercial binder are not processed in materials receiving/mail processing unit.

Although items other than library materials are received and processed (e.g., mail, equipment, etc.) the observed unit times were all applied to library materials only, and then adjusted using the above assumptions.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Materials Receiving/Mail Processing							
50. Unpack library materials	1.38	0.28	per item received	—	0.067 mins. per item acquired	0.076	0.152
51. Annotate invoices/packing slips	1.38	0.28	per item ordered or on approval	—	0.018 mins. per item acquired	0.083	0.166
52. Sort library materials	3.16	0.64	per item received	0.0045	0.228 mins. per item acquired	0.149	0.298
53. Sort mail	2.22	0.45	per item acquired	—	0.165 mins. per item acquired	0.094	0.188
54. Deliver materials, invoices, mail, etc.	1.73	0.35	per item acquired	—	0.051 mins. per item acquired	0.101	0.040
55. Prepare materials to be mailed/shipped	21.99	4.46	per item to be mailed/shipped	—	0.076 mins. per item acquired	0.090	0.036
56. Other materials receiving/mail processing	0.19	0.038	per item received	—	0.069 mins. per item acquired	0.011	0.022

A.2.2.4 Receipt Processing

Receipt Processing includes those activities involving the upkeep of records associated with the acquisition of library materials, claiming of missing parts and delivery of materials for cataloging and other processing.

Assumptions made in building this portion of the model were:

- 6% of the items acquired but not ordered will be searched in other manual files; this translates into 1.8% of the items acquired.
- 90% of the items acquired but not ordered will be searched in other automated files (OCLC); this translates into 23% of the items acquired.
- 4% of the items acquired but not ordered will not be searched in any file because they are not wanted for the library.
- 11.5% of all serial/periodical items acquired are claimed.
- 100% of all items acquired, minus 95% of the periodical titles (which are already cataloged) are delivered to cataloging; this translates into 75% of the items acquired.

TECHNICAL SERVICES – ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Receipt Processing							
57. Search automated acquisitions file	4.19	0.85	per title/item received that is processed through automated acquisitions system	—	0.051	0.285	0.570
				mins. per item acquired that is processed through an automated system			
58. Search manual acquisitions file	1.68	0.34	per title/item received that is processed through manual acquisitions system	0.0062	0.050	0.100	0.200
				mins. per item acquired that is processed through a manual acquisitions system			
59. Search other manual files	42.89	8.70	per title/item received that is processed through other manual files	0.0036	0.045	0.036	0.072
				mins. per item acquired			
60. Search other automated files	1.58	0.32	per title/item received that is processed through other automated files	—	0.038	0.012	0.024
				mins. per item acquired			
61. Update automated acquisitions file for receipt	6.31	1.28	per title/item acquired that is processed through an automated acquisitions system	—	0.140	0.381	0.762
				mins. per item acquired that is processed through an automated acquisitions system			
62. Update manual acquisitions file for receipt	2.22	0.45	per title/item acquired that is processed through manual acquisitions system	—	0.061	0.128	0.256
				mins. per item acquired that is processed through a manual acquisitions system			
63. Claim missing parts	40.97	8.31	per serial/periodical title/ item claimed	—	0.224	0.244	0.488
				mins. per serial/periodical item acquired			
64. Prepare materials for delivery to Cataloging, etc.	1.43	0.29	per title/item delivered to cataloging, etc.	0.0032	0.059	0.051	0.102
				mins. per item acquired			
65. Deliver materials to Cataloging, etc.	0.39	0.08	per title/item delivered to cataloging, etc.	0.0032	0.026	0.029	0.058
				mins. per item acquired			
66. Other receipt processing	1.23	0.25	per title/item received	—	0.096	0.057	0.114
				mins. per item acquired			

A.2.2.5 Copy Cataloging

Copy cataloging involves those activities associated with the use of OCLC cataloging copy, including searching OCLC, reviewing OCLC copy, accepting OCLC copy, printing labels and delivering the materials for further processing.

Assumptions made in building this portion of the model were:

- OCLC is searched for all items ordered, plus 6% of items acquired but not ordered; this translates into 72% of items acquired.

- OCLC copy is reviewed for 96.5% of the items delivered to cataloging (all items copy cataloged or upgraded from copy); this translates into 72% of items acquired.

- OCLC copy is accepted for 80.5% of the items delivered to cataloging (all items copy cataloged); this translates into 60% of items acquired.

- 16% of all items delivered to cataloging (except added volumes) are delivered for upgraded (or enhanced) cataloging; this translates into 11.25% of items acquired.

- 3.5% of all items delivered to cataloging (except added volumes) are delivered for original cataloging; this translates into 1.9% of the items acquired.

- 1% of all items delivered to cataloging are added volumes and are not cataloged at all.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant
Copy Cataloging						
67. Search OCLC	5.28	1.07	per title/item searched	0.122	0.480	0.167
				mins. per item acquired		
68. Review OCLC copy	5.42	1.10	per title/item found	0.146	0.470	0.179
				mins. per item acquired		
69. Accept OCLC copy	6.51	1.32	per title/item copy cataloged	0.148	0.371	0.233
				mins. per item acquired		
70. Print labels	1.23	0.25	per title/item copy cataloged	0.0015	0.063	0.083
				mins. per item acquired		
71. Deliver items for physical processing	1.13	0.23	per title/item copy cataloged	0.031	0.0063	0.033
				mins. per item acquired		
72. Deliver items for upgrade	9.22	1.87	per title/item upgraded	—	0.179	0.031
				mins. per item acquired		
73. Deliver items for original cataloging	12.08	2.45	per title/item originally cataloged	0.0015	0.024	0.021
				mins. per item acquired		

A.2.2.6 Upgraded and Original Cataloging

Upgraded and Original Cataloging involves all activities associated with the cataloging of library materials for which either no OCLC copy exists, or for which OCLC copy is inadequate.

Assumptions made in building this portion of the model were:

- 19.5% of the items delivered to cataloging (except added volumes) are originally cataloged or upgraded (enhanced); this translates into 8% of items acquired.

- 60% of the items originally cataloged or upgraded are reviewed and referred to a library assistant for additional searching; this translates into 8% of items acquired.

- 40% of the items originally cataloged or upgraded are reviewed by a cataloger who performs additional searching; this translates into 6% of items acquired.

- 16% of all items delivered to cataloging (except added volumes) have upgraded cataloging; this translates into 11.25% of items acquired.

- 3.5% of all items delivered to cataloging (except added volumes) are originally cataloged; this translates into 1.9% of items acquired.

- 6.3% of items originally cataloged or upgraded are referred for authority problems; this translates into 1% of items acquired.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant
Upgraded and Original Cataloging						
74. Review items and request additional searching	6.56	1.33	per title/item upgraded or originally cataloged	0.047	0.027	0.032
75. Review items and perform additional searching	20.31	4.12	per title/item upgraded or originally cataloged	0.081	0.132	0.034
76. Prepare upgrades of OCLC records	29.14	5.91	per title/item upgraded	0.266	0.384	0.015
77. Perform original cataloging	147.90	30.00	per title/item originally cataloged	0.252	0.318	—
78. Input upgrades into OCLC	10.65	2.16	per title/item upgraded	—	0.152	0.091
79. Input original cataloging into OCLC	25.69	5.21	per title/item originally cataloged	0.017	0.075	0.0066
80. Print labels	1.28	0.26	per title/item upgraded or originally cataloged	0.0018	0.034	—
81. Deliver items for physical processing	5.52	1.12	per title/item upgraded or originally cataloged	0.080	0.0039	0.073
82. Resolve referred authority problems	83.32	16.90	per title/item referred	0.083	0.086	—
83. Other upgraded and original cataloging	2.02	0.41	per title/item upgraded or originally cataloged	0.021	0.036	—

A.2.2.7 Catalog Maintenance

Catalog Maintenance includes all activities associated with ensuring the integrity of the catalog and shelflist.

Assumptions made in building this portion of the model were:

- 74% of all items acquired are cataloged.
- Cards are pulled for maintenance for 3% of all items in the collection.
- Authority conflicts are resolved for 11.5% of all items in the collection.
- Problems are referred to catalogers for 11.5% of all items in the collection.
- The shelflist is updated for all items sent to cataloging; this translates into 75% of the items acquired.
- OCLC is updated for 1% of items cataloged; this translates into 0.8% of items acquired.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Catalog Maintenance							
84. Review OCLC cards	1.43	0.29	per title/item cataloged	—	0.138 mins. per item acquired	0.026	0.052
85. Pre-file cards	1.23	0.23	per title/item cataloged	—	0.042 mins. per item acquired	0.047	0.094
86. Check pre-filed cards	4.14	0.84	per title/item cataloged	0.085	0.287 mins. per item acquired	0.082	0.164
87. File cards	6.46	1.31	per title/item cataloged	—	0.447 mins. per item acquired	0.174	0.348
88. Pull cards for record maintenance	3.30	0.67	per title/item pulled	0.0010	0.011 mins. per item in the collection	0.0082	0.0164
89. Resolve authority conflicts	0.79	0.16	per title/item resolved	0.0033	0.0072 mins. per item in the collection	0.0016	0.0032
90. Refer problems to catalogers	0.48	0.097	per title/item referred	0.0015	0.0040 mins. per item in the collection	0.0019	0.0038
91. Update manual shelflist	3.11	0.63	per title/item sent to cataloging	0.0080	0.212 mins. per item acquired	0.083	0.1164
92. Update automated catalog/shelflist	7.40	1.50	per title/item sent to cataloging	0.0018	0.155 mins. per item acquired	0.323	0.646
93. Update OCLC, as required	46.39	9.41	per title/item updated	0.0045	0.050 mins. per item acquired	0.0038	0.0076
94. Other catalog maintenance	0.84	0.17	per title/item sent to cataloging	0.020	0.026 mins. per item acquired	0.027	0.054

A.2.2.8 Physical Processing

Physical Processing includes those activities associated with preparing all types of library materials for shelving/storage and for circulation (e.g., affixing card pockets). It may also involve reinforcing and repairing materials.

Assumptions made in building this portion of the model were:

- 100% of items cataloged have OCLC-produced labels fixed to them; this translates into 74% of items acquired.
- 100% of items acquired but not cataloged have spine (or other) labels prepared in-house fixed to them; this translates into 26% of items acquired.
- 100% of items acquired have property stamps, targets and barcodes fixed to them.
- Other items are placed in 15.5% of books and government documents, 100% of AVs and computer software, and 50% of periodical issues; this translates into 34% of items acquired.
- Minor repairs are made to 0.6% of materials cataloged, plus 1.25% of items in the collection; this translates into 19% of items acquired.
- 1.25% of materials cataloged, plus 1.4% of the monographic collection are prepared for commercial binding/repair; this translates into 1.2% of items acquired.
- All items acquired, plus all items having minor repairs, plus all returned bound monographs, plus bound volumes for 65% of periodical subscriptions are prepared for delivery to shelving areas; this translates into 120% of all items acquired.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Physical Processing							
95. Affix OCLC-produced spine labels	1.08	0.22	per title/item cataloged	—	0.037 mins. per item acquired	0.041	0.082
96. Prepare and affix spine labels	7.35	1.49	per title/item acquired but not cataloged	—	0.114 mins. per item acquired	0.091	0.182
97. Apply property stamp	1.18	0.24	per title/item acquired	—	0.086 mins. per item acquired	0.052	0.104
98. Affix targets	1.08	0.22	per title/item acquired that is targeted	—	0.093 mins. per item acquired	0.042	0.084
99. Affix barcodes	1.53	0.31	per title/item acquired that is barcoded	0.010	0.106 mins. per item acquired	0.063	0.126
100. Place other items in library materials	1.33	0.27	per title/item acquired that is targeted or barcoded	0.0015	0.096 mins. per item acquired	0.058	0.116
101. Apply covers, binding reinforcers, etc.	3.50	0.71	per title/item covered, etc	—	0.073 mins. per item acquired	0.056	0.112
102. Perform minor repairs	6.26	1.27	per title/item repaired	—	0.062 mins. per item acquired	0.060	0.120
103. Prepare monographs for commercial binding/repair	12.77	2.59	per title/item repaired	0.0078	0.0021 mins. per item acquired	0.0072	0.014
104. Receive and inspect returned bound monographs	6.85	1.39	per title/item returned	0.0041	0.0018 mins. per item acquired	0.0036	0.0072
105. Prepare materials for delivery to shelving areas	1.18	0.24	per title/item delivered	—	0.084 mins. per item acquired	0.067	0.134
106. Deliver materials to shelving areas	0.49	0.10	per title/item delivered	—	0.0084 mins. per item acquired	0.036	0.072
107. Other physical processing	2.12	0.43	per title/item acquired	0.0017	0.055 mins. per item acquired	0.126	0.252

A.2.2.9 Periodicals Binding

Periodicals Binding involves all those activities which are required to prepare periodicals to be sent to the bindery and to monitor the return of the bound volumes.

Assumptions made in building this portion of the model were:

- 65% of the periodicals subscriptions are bound.
- 5% of the periodical subscriptions are new titles.
- 13% of the periodicals that are bound have issues missing.
- Updating of binding records is done twice, when the periodicals are sent to the binder and when they are received back.
- Updating of automated circulation records is done when the periodicals are checked out to the binder and when they are checked back in.
- An average of two bound volumes are created for each periodical subscription that is bound.

TECHNICAL SERVICES - PERIODICALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Periodicals Binding							
108. Determine binding requirements	7.01	1.15	per title/item bound	0.373	2.546	0.545	1.090
109. Create binding records for new titles	79.56	13.02	per new title bound	1.533	2.001	0.148	0.296
110. Arrange binding units	12.22	2.00	per title/item bound	0.515	1.693	1.912	3.824
111. Seek replacement of missing issues	38.51	6.30	per title/item bound that has missing issues	0.101	1.255	0.639	1.278
112. Pull, tie and prepare binding units for binder	11.38	1.86	per title/item bound	1.024	2.202	1.391	2.782
113. Update manual binding records	5.66	0.93	per title/item bound	—	2.208	0.491	0.982
114. Update automated binding records	1.10	0.18	per title/item bound	—	0.184	0.178	0.356
115. Update automated circulation records	1.07	0.18	per title/item bound	—	0.178	0.172	0.344
116. Receive and inspect returned bound volumes	9.62	1.57	per title/item bound	0.539	1.113	1.533	3.066
117. Annotate invoices/packing slips	0.34	0.055	per title/item bound	0.154	0.065	—	—
118. Forward invoices for payment processing	1.97	0.32	per title/item bound	0.059	0.030	0.397	0.794
119. Perform additional physical processing of returned items	9.42	0.89	per title/item bound	0.154	0.793	0.858	1.716
120. Prepare materials for delivery to shelving areas	7.93	1.30	per title/item bound	0.024	0.408	1.575	3.150
121. Deliver returned items to Cataloging department for physical processing	0.81	0.13	per title/item bound	0.024	0.095	0.136	0.272
122. Other periodicals binding	0.10	0.016	per title/item bound	—	0.065	—	—

Adjusted Unit Time (Mins.) mins. per periodical subscription

A.2.2.10 Invoice Processing

Invoice Processing involves all bookkeeping and other activities related to processing invoices for the purchase of library materials or services (e.g., commercial binding). These activities often require interaction with a centralized accounting facility at the university.

Assumptions made in building this portion of the model were:

- invoices are received and reviewed for all items acquired (except periodicals, serials, standing orders and gifts); plus periodical subscriptions, serial orders and standing orders (except gifts); this translates into 77% of items acquired.

- vendor queries occur on 10% of the invoices.

TECHNICAL SERVICES - ALL MATERIALS	Av. Time Per Title (Mins.)	Av. Time Per Item (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant
Invoice Processing						
123. Receive and review invoices	1.13	0.23	per title/item acquired minus gifts	0.0023	0.118	0.058
				mins. per item acquired		
124. Log in invoices	0.44	0.09	per title/item acquired minus gifts	--	0.052	0.018
				mins. per item acquired		
125. Update acquisitions records with price	0.54	0.11	per title/item acquired minus gifts	--	0.046	0.040
				mins. per item acquired		
126. Obtain balance in each fund	0.32	0.064	per title/item acquired minus gifts	--	0.022	0.027
				mins. per item acquired		
127. Prepare invoices for payment processing	1.82	0.37	per title/item acquired minus gifts	--	0.083	0.200
				mins. per item acquired		
128. Prepare payment documents	0.46	0.093	per title/item acquired minus gifts	--	0.060	0.012
				mins. per item acquired		
129. Enter invoice data into automated centralized accounting system	0.45	0.092	per title/item acquired minus gifts	--	0.049	0.022
				mins. per item acquired		
130. Send invoices, etc. to central accounting	0.44	0.090	per title/item acquired minus gifts	0.0014	0.045	0.023
				mins. per item acquired		
131. Receive and review payment documents from central accounting	0.99	0.20	per title/item acquired minus gifts	--	0.016	0.137
				mins. per item acquired		
132. File payment documents	0.18	0.037	per title/item acquired minus gifts	--	0.016	0.013
				mins. per item acquired		
133. File invoice copies	0.28	0.057	per title/item acquired minus gifts	--	0.026	0.018
				mins. per item acquired		
134. Respond to vendor queries	5.47	1.11	per vendor query	--	0.077	0.0086
				mins. per item acquired		
135. Other invoice processing	0.19	0.039	per title/item acquired minus gifts	--	0.0087	0.021
				mins. per item acquired		

A.2.3 USER SERVICES

A.2.3.1 Reference/Readers' Advisory Services

Reference/Readers' Advisory Services include most activities related to providing general information service and library reference service to library users. Online database searching is considered as a separate activity.

A.2.3.2 Online Database Searching

Online database searching includes all activities related to receiving and discussing/negotiating requests for online searching of reference databases, performing and updating the online searches, and presenting the results to the users.

USER SERVICES	Av. Time (Mins.)	Unit	Adjusted Unit Time (Mins.)			
			Librarian	Library Assistant	Clerical Assistant	Student Assistant
Reference/Readers' Advisory Activities						
136. Directional/information requests	1.23	per directional/informational request	—	0.41	0.16	0.66
			mins. per directional/informational request			
137. In-depth requests	7.13	per in-depth request	5.42	1.71	—	—
			mins. per in-depth request			
138. Compile reading lists on specific subjects	8.10	per faculty member	4.60	3.50	—	—
			mins. per faculty member			
139. Other reference/reader's advisory	0.11	per reference request	0.039	0.062	0.0085	—
			mins. per reference request			
140. Online Database Searching	107.42	per online search	75.25	26.47	5.70	—
			mins. per online search			

A.2.3.3 Circulation

Circulation includes all activities associated with checking library materials out and in, renewing and reserving materials, and processing overdues. This category also includes the circulation of Reserve Book Room materials.

Assumptions made in building this portion of the model were:

- 24% of the items circulated are renewed
- 2% of the items circulated are reserved
- 9% of the items circulated are overdues

USER SERVICES	Av. Time (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Circulation Activities						
141. Check out materials	0.34	per item checked out	0.023	0.126	0.034	0.158
				mins. per item circulated		
142. Check in materials	1.02	per item checked in	0.012	0.090	0.101	0.470
				mins. per item circulated		
143. Renew materials	5.43	per item renewed	0.0054	0.034	0.044	0.205
				mins. per item circulated		
144. Reserve materials	17.36	per item reserved	0.0021	0.023	0.057	0.265
				mins. per item circulated		
145. Process overdues	7.24	per item overdue	—	0.076	0.103	0.473
				mins. per item circulated		
146. Operate the automated circulation system	0.19	per item circulated	—	0.038	0.027	0.124
				mins. per item circulated		
147. Operate and check the automated security system	322.79	hours per library per year	—	96.67	40.00	36.63
				hours per library per year		
148. Other circulation	0.28	per item circulated	—	0.061	0.039	0.181
				mins. per item circulated		

A.2.3.4 Reshelving and Stack Maintenance

These activities involve the reshelving of all library materials which were circulated, sent out on loan, or used in the library. They also include shelving of newly-processed materials for the collection(s) (including newly-bound periodical volumes) and the general activities associated with maintaining order in all stack areas.

Assumptions made in building this portion of the model were:

- All items circulated, used in the library, ILLs filled, items acquired and items needing binding, repair or replacement, need to be reshelved.

- Items needing binding, repair or replacement constitute 2% of the items needing shelving/reshelving.

USER SERVICES	Av. Time (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Reshelving Activities and Stack Maintenance						
149. Preshelve materials	0.30	per item shelved/reshelved	0.0026	0.019	0.057	0.217
			mins. per item shelved/reshelved			
150. Reshelve materials	0.23	per item shelved/reshelved	0.0017	0.014	0.045	0.171
			mins. per item shelved/reshelved			
151. Locate materials for users in closed stack areas	0.86	per item shelved/reshelved	0.0040	0.0134	0.0095	0.036
			mins. per item shelved/reshelved			
152. Identify materials needing binding or replacement	10.81	per item needing binding or replacement	0.0022	0.0066	0.0053	0.202
			mins. per item shelved/reshelved			
153. Other reshelving and stack maintenance	0.14	per item shelved/reshelved	0.0045	0.025	0.024	0.091
			mins. per item shelved/reshelved			

A.2.3.5 Interlibrary Borrowing

Interlibrary borrowing involves all activities related to borrowing library materials from other libraries, supplying these materials to CSU requesters, and then returning the materials to the appropriate libraries.

Assumptions made in building this portion of the model were:

- 17% of requests sent have to be followed up
- 5% of all items borrowed become overdue and incur fines
- 14% of items borrowed from other libraries are charged for.

USER SERVICES	Av. Time (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Interlibrary Borrowing Activities						
154. Receive requests from users	2.74	per ILB request sent	0.499	1.687	0.297	0.261
			mins. per ILB request sent			
155. Locate source of needed materials	5.43	per ILB request sent	1.574	2.699	0.613	0.539
			mins. per ILB request sent			
156. Request materials on loan	4.37	per ILB request sent	1.390	2.977	--	--
			mins. per ILB request sent			
157. Follow-up requests	3.49	per ILB request followed up	0.088	0.506	--	--
			mins. per ILB request sent			
158. Process received materials	7.18	per ILB request filled	0.408	6.148	0.399	0.225
			mins. per ILB request filled			
159. Notify users	1.28	per ILB request sent	0.032	1.245	--	--
			mins. per ILB request sent			
160. Follow-up overdues	20.72	per filled ILB overdue	0.044	0.992	--	--
			mins. per ILB request filled			
161. Receive returned materials from users	0.60	per ILB request filled	0.009	0.496	0.0089	0.0050
			mins. per ILB request filled			
162. Process fines	28.70	per filled ILB overdue	--	1.435	--	--
			mins. per ILB request filled			
163. Return borrowed materials	2.19	per ILB request filled	0.089	0.718	0.083	0.498
			mins. per ILB request filled			
164. Process invoices	3.73	per ILB request charged for	0.044	0.478	--	--
			mins. per ILB request filled			
165. Other interlibrary borrowing	0.20	per ILB request filled	--	0.195	--	--
			mins. per ILB request filled			

A.2.3.6 Interlibrary Lending

Interlibrary lending involves all activities associated with processing other libraries' requests for loan or photocopies of CSU library materials. Follow-up to ensure return of materials also may be required.

Assumptions made in building this portion of the model were:

- reserves are placed for 32.5% of the requests filled.
- a status report is sent to the borrowing library for 32.5% of requests received.
- follow-up is required on 13% of requests filled.
- 25% of the loans are charged for.

USER SERVICES	Av. Time (Mins.)	Unit	Adjusted Unit Time (Mins.) Librarian	Library Assistant	Clerical Assistant	Student Assistant
Interlibrary Lending Activities						
166. Receive requests	2.05	per ILL request received	0.798	0.755	0.432	0.069
			mins. per ILL request received			
167. Search for materials	1.186	per ILL request received	0.076	0.617	0.425	0.068
			mins. per ILL request received			
168. Physically retrieve materials	1.54	per ILL request filled	0.172	0.670	0.648	0.050
			mins. per ILL request filled			
169. Make photocopies	1.40	per ILL request filled	0.022	0.305	0.997	0.078
			mins. per ILL request filled			
170. Place reserves	0.088	per ILL item reserved	—	—	—	0.0015
			mins. per ILL request filled			
171. Report status to borrowing library	2.71	per request for which a report is sent	0.200	0.225	0.392	0.063
			mins. per ILL request received			
172. Forward requests	0.02	per ILL request received	—	0.015	—	—
			mins. per ILL request received			
173. Prepare materials for delivery	1.46	per ILL request filled	0.255	0.670	0.498	0.039
			mins. per ILL request filled			
174. Follow-up items loaned	2.84	per item loaned that is followed up	0.055	0.177	0.127	0.0099
			mins. per ILL request filled			
175. Process returned materials	0.47	per ILL request filled	0.111	0.354	—	—
			mins. per ILL request filled			
176. Prepare invoices	0.93	per filled ILL charged for	0.044	0.122	0.061	0.0047
			mins. per ILL request filled			
177. Follow-up on unpaid invoices	0.45	per followed up invoice	0.066	0.022	0.022	0.0017
			mins. per ILL request filled			
178. Process payments	1.32	per filled ILL charged for	0.100	0.017	0.199	0.015
			mins. per ILL request filled			
179. Other interlibrary lending	0.12	per ILL request filled	—	0.122	—	—
			mins. per ILL request filled			

A.2.3.7 Management

Management involves the variety of activities required to direct the overall operation of the library or of a specific function of the library. These activities include management of personnel, facilities and finances. Anyone who is a supervisor would be responsible for some management activities.

Management activities relate to the number of staff in a library.

MANAGEMENT AND ADMINISTRATION	Average Annual Hours Per FTE		
	Librarian	Library Assistant	Clerical Assistant
Management Log			
180. Meetings - formal/informal	132.9	5.94	5.90
181. Phone calls	58.2	3.14	14.2
182. General administration	58.65	4.05	8.78
183. Planning	49.5	6.40	7.86
184. Financial management	16.99	3.50	8.87
185. Management activities	55.1	1.15	—
186. Systems analysis and design	9.52	0.78	1.19
187. Facilities management	10.15	6.66	18.52
188. Equipment and supplies	12.4	2.08	44.2
189. Contract services	3.14	—	0.68
190. Personnel management and staff development	37.41	6.17	1.68
191. Communications	33.2	1.55	1.04
192. Marketing and public relations	23.14	10.44	10.97
193. Research and development	13.38	—	—
194. Other management	—	0.36	—

A.2.3.8 Administrative Support

Administrative support activities are those office activities which are common to the operation of any organization (e.g., typing/word processing, filing, sorting mail).

Administrative support activities relate to the number of staff in a library.

MANAGEMENT AND ADMINISTRATION	Average Annual Hours Per FTE			
	Librarian	Library Assistant	Clerical Assistant	Student Assistant
Administrative Support				
195. Type	5.37	10.25	57.23	3.80
196. Use PC/word processor	5.13	9.51	36.20	2.46
197. Maintain payroll data	0.13	10.44	50.88	3.45
198. Maintain financial data	7.74	1.56	34.68	2.35
199. File	0.44	7.36	19.20	1.30
200. Sort and route mail	0.37	5.42	16.43	1.11
201. Answer phones	0.78	14.34	50.92	3.45
202. Make photocopies	1.03	7.19	17.24	1.17
203. Other administrative support	0.157	0.53	18.19	1.23

A.2.3.9 Automated Systems Administration

Administration of automated systems involves all activities related to ensuring the proper functioning of the hardware and software associated with automated library systems (e.g., CLSI). It also involves interaction with vendors and training staff in new features of the system(s).

Automated systems administration relates to the number and mix of systems in operation at the library. We tied these activities to the annual expenditures for equipment.

MANAGEMENT AND ADMINISTRATION	Annual Hours Per FTE		
	Librarian	Library Assistant	Clerical Assistant
Automated Systems Administration			
204. Assign and change system passwords	0.19	1.96	0.018
205. Back up and maintain system	0.72	41.23	1.22
206. Review system usage	1.78	13.95	0.73
207. Monitor system performance	2.54	4.15	0.73
208. Perform equipment testing and minor repairs	8.06	4.00	—
209. Call for equipment maintenance	0.67	1.19	2.10
210. Report software problems to vendor	1.54	1.54	0.34
211. Review and file vendor's documentation	0.67	1.19	—
212. Prepare to train staff in new system features	7.78	1.77	0.25
213. Train staff in new system features	4.78	3.23	3.57
214. Produce system-generated management reports	1.01	3.30	0.49
215. Other automated systems administration	0.02	9.57	0.16

A.2.4 INSTRUCTIONAL ACTIVITIES

Instructional Activities involve preparation of lectures, workbooks, and other materials to support instruction of students and the actual presentation of information instruction to the students.

USER INSTRUCTION	Librarian	Library Assistant	Clerical Assistant
216. Instructional Preperation	2.60	0.19	0.85
	mins. per full-time student		
217. Information Instruction (formal)	1.78	0.26	—
	mins. per full-time student		
218. Information Instruction (informal)	2.60	0.19	0.85
	mins. per full-time student		

APPENDIX E

Derivation of Access Services Workload Elements

Calculation of Workload Elements for Items Charged, Items Non-charged and Reshelved, and Interlibrary Loan Transactions
Actual 1985/86

CAMPUS	A.Y. FTES (X)	ITEMS CHARGED (y)	ITEMS RESHELVED (y)	ILL TRANSACTIONS (y)
Bakersfield	2,760	81,443	286,675	7,781
Chico	13,006	591,850	472,373	11,635
D. Hills	5,245	187,194	155,148	11,733
Fresno	13,882	486,935	621,505	6,791
Fullerton	16,383	282,071	623,494	12,472
Hayward	8,681	239,068	197,939	5,795
Humboldt	5,675	226,959	304,485	5,533
Long Beach	22,917	966,856	569,235	20,012
Los Angeles	13,245	388,467	845,963	13,706
Northridge	20,402	500,628	812,995	12,844
Pomona	13,440	487,777	778,867	12,345
Sacramento	17,700	739,068	686,469	21,029
S. Bernardino	4,782	172,879	516,779	6,465
San Diego	25,667	635,203	1,588,007	23,954
Calexico	201	22,620	49,539	378
S. Francisco	18,115	654,000	1,145,036	11,238
San Jose	18,522	450,655	561,032	14,627
SLO	14,378	672,369	436,860	15,321
Sonoma	4,124	168,994	94,332	7,816
Stanislaus	3,128	120,835	270,400	10,998
Totals	242,252	8,075,871	11,017,133	232,473

	ITEMS CHARGED PER FTE		ITEMS RESHELVED PER FTE		ILL TRANSACTIONS PER FTE	
$\frac{\Sigma xy}{\Sigma x^2}$ =	$\frac{128,873,558,000}{3,970,184,945}$	= 32.46	$\frac{175,382,830,600}{3,970,184,945}$	= 44.17	$\frac{3,462,208,781}{3,970,184,945}$	= 0.87

APPENDIX F

Application of Funding Formulas by Campus and Cost Center

APPLICATION OF FUNDING FORMULAS BY CAMPUS AND
COST CENTER IN FTE POSITIONS
(Task Force Model Using 1986/87 Inputs)

Current Formulas	Y1	Y2	Y3	Y4	Total	Prof/Mgmt	Support
BAK	2.0	7.4	10.7	6.0	26.2	6.5	19.6
CHI	3.0	33.9	20.5	21.7	79.2	19.8	59.4
D H	2.0	14.1	13.5	11.2	40.8	10.2	30.6
FRE	3.0	36.2	21.7	25.2	86.2	21.5	64.6
FUL	3.0	41.4	23.9	30.0	98.3	24.6	73.7
HAY	3.0	22.7	16.8	18.4	60.9	15.2	45.7
HUM	2.0	14.9	13.4	10.1	40.4	10.1	30.3
L B	4.0	58.5	30.5	42.9	135.9	34.0	101.9
L A	3.0	33.8	21.2	30.7	88.6	22.2	66.5
NOR	4.0	52.3	28.1	38.4	122.8	30.7	92.1
POM	3.0	35.5	21.4	23.5	83.3	20.8	62.5
SAC	3.0	45.8	25.9	33.0	107.8	26.9	80.8
S B	2.0	13.2	12.9	10.2	38.3	9.6	28.8
S D	4.0	65.5	33.8	46.3	149.5	37.4	112.2
S F	3.0	46.6	26.6	36.2	112.5	28.1	84.3
S J	3.0	47.4	26.6	35.5	112.5	28.1	84.4
SLO	3.0	36.8	21.7	22.4	83.8	20.9	62.8
SON	2.0	10.9	12.0	8.8	33.7	8.4	25.3
STA	2.0	8.0	10.9	6.4	27.3	6.8	20.5
TOTAL	54.0	625.0	392.1	456.9	1,528.0	382.0	1,146.0
Recommended Formulas							
BAK	5.0	7.4	12.3	7.4	32.1	10.6	21.5
CHI	6.0	33.9	22.7	26.4	89.0	29.4	59.6
D H	5.0	14.1	15.2	13.6	48.0	15.8	32.2
FRE	6.0	36.3	23.9	30.6	96.8	31.9	64.9
FUL	6.0	41.4	26.2	36.5	110.1	36.3	73.8
HAY	6.0	22.7	18.8	22.5	70.0	23.1	46.9
HUM	5.0	14.9	15.2	12.3	47.4	15.6	31.7
L B	7.0	58.5	33.2	52.2	150.9	49.8	101.1
L A	6.0	33.8	23.3	37.6	100.8	33.2	67.5
NOR	7.0	52.3	30.6	46.7	136.7	45.1	91.6
POM	6.0	35.5	23.5	28.6	93.6	30.9	62.7
SAC	6.0	45.8	28.4	40.2	120.4	39.7	80.7
S B	5.0	13.2	14.6	12.5	45.3	15.0	30.4
S D	7.0	65.5	36.6	56.3	165.5	54.6	110.9
S F	6.0	46.6	29.1	44.3	126.0	41.6	84.4
S J	6.0	47.4	29.1	43.4	125.9	41.5	84.3
SLO	6.0	36.8	23.9	27.1	93.7	30.9	62.8
SON	5.0	10.9	13.6	10.7	40.3	13.3	27.0
STA	5.0	8.0	12.5	7.8	33.3	11.0	22.3
TOTAL	111.0	625.1	432.8	557.0	1,725.8	569.5	1,156.3

APPLICATION OF FUNDING FORMULAS BY CAMPUS AND
COST CENTER IN FTE POSITIONS
(Task Force Model Using 1987/88 Inputs)

Current Formulas	Y1	Y2	Y3	Y4	Total	Prof/Mgmt	Support
BAK	2.0	8.4	11.1	6.9	28.5	7.1	21.3
CHI	3.0	34.4	20.8	22.4	80.7	20.2	60.5
D H	2.0	13.5	13.2	11.3	39.9	10.0	29.9
FRE	3.0	37.3	22.2	25.9	88.4	22.1	66.3
FUL	3.0	42.7	24.5	30.5	100.7	25.2	75.5
HAY	3.0	22.7	16.9	18.8	61.4	15.3	46.0
HUM	2.0	14.2	13.2	9.4	38.8	9.7	29.1
L B	4.0	60.1	31.4	45.0	140.5	35.1	105.3
L A	3.0	34.4	21.5	31.2	90.1	22.5	67.6
NOR	4.0	53.3	28.7	39.0	125.1	31.3	93.8
POM	3.0	36.0	21.6	23.7	84.3	21.1	63.3
SAC	3.0	46.5	26.4	33.5	109.4	27.3	82.0
S B	2.0	15.3	13.9	12.7	43.9	11.0	32.9
S D	4.0	66.8	34.6	47.7	153.0	38.3	114.8
S F	3.0	47.6	27.1	36.8	114.5	28.6	85.9
S J	3.0	49.5	27.8	37.8	118.1	29.5	88.5
SLO	3.0	37.0	21.9	22.6	84.6	21.1	63.4
SON	2.0	11.5	12.3	9.3	35.1	8.8	26.3
STA	2.0	9.2	11.3	7.0	29.5	7.4	22.1
TOTAL	54.0	640.4	400.5	471.4	1,566.3	391.6	1,174.8
Recommended Formulas							
BAK	5.0	8.4	12.7	8.5	34.6	11.4	23.2
CHI	6.0	34.4	23.0	27.1	90.6	29.9	60.7
D H	5.0	13.5	14.9	13.8	47.1	15.6	31.6
FRE	6.0	37.3	24.5	31.5	99.2	32.7	66.5
FUL	6.0	42.7	26.8	37.1	112.6	37.2	75.5
HAY	6.0	22.7	18.9	23.0	70.5	23.3	47.2
HUM	5.0	14.2	15.0	11.4	45.6	15.1	30.6
L B	7.0	60.1	34.2	54.8	156.0	51.5	104.5
L A	6.0	34.4	23.7	38.2	102.4	33.8	68.6
NOR	7.0	53.3	31.3	47.5	139.1	45.9	93.2
POM	6.0	36.0	23.8	28.8	94.6	31.2	63.4
SAC	6.0	46.5	28.8	40.9	122.2	40.3	81.9
S B	5.0	15.3	15.6	15.6	51.5	17.0	34.5
S D	7.0	66.8	37.5	58.1	169.4	55.9	113.5
S F	6.0	47.6	29.6	44.9	128.2	42.3	85.9
S J	6.0	49.5	30.3	46.2	132.0	43.6	88.4
SLO	6.0	37.0	24.1	27.5	94.6	31.2	63.4
SON	5.0	11.5	13.9	11.4	41.9	13.8	28.0
STA	5.0	9.2	12.9	8.5	35.6	11.8	23.9
TOTAL	111.0	640.5	441.6	574.9	1,768.0	583.4	1,184.5

APPENDIX G

ACRL Standards Applied to CSU Libraries

APPLICATION OF ACRL STANDARDS TO CSU LIBRARIES
1986-87 Fiscal Year

Campus	FTES Compo-nent	Hold-ings Comp.	Acqui-sitions Comp.	Total Librar-ians*	Current Form-ulas**	% of Stan-dard	ACRL Rating
BAK	6	3	3	12	6.5	54	D
CHI	24	7	5	36	19.8	55	D
D H	11	4	5	20	10.2	51	D
FRE	24	8	7	39	21.5	55	D
FUL	26	7	4	37	24.6	66	C
HAY	18	8	5	30	15.2	51	D
HUM	12	4	4	20	10.1	51	D
L B	33	10	7	50	34.0	68	C
L A	24	10	5	39	22.2	57	D
NOR	31	10	8	49	30.7	63	C
POM	24	6	5	35	20.8	59	D
SAC	28	9	6	43	26.9	63	C
S B	11	5	5	21	9.6	46	D-
S D	36	10	8	54	37.4	69	C
S F	28	8	6	42	28.1	67	C
S J	29	9	6	44	28.1	64	C
SLO	25	7	5	37	20.9	56	D
SON	9	5	4	18	8.4	47	D-
STA	7	3	2	12	6.8	57	C
TOTALS	406	133	99	638	382.0	60	C

* These totals do not include support staff
** Totals generated by current staffing formulas

COMPARISON OF ACRL STANDARDS TO STAFFING LEVELS
RECOMMENDED BY THE TASK FORCE ON LIBRARY STAFFING

Campus	ACRL Standard (Librarian FTEs)	Recommended FTEs	% of Std. Budgeted	ACRL Rating
BAK	12	10.6	88	B
CHI	36	29.4	82	B
D H	20	15.8	79	B
FRE	39	31.9	82	B
FUL	37	36.6	98	A
HAY	30	23.1	77	B
HUM	20	15.6	78	B
L B	50	49.8	99	A
L A	39	33.2	85	B
NOR	49	45.1	92	A
POM	35	30.9	88	B
SAC	43	39.7	92	A
S B	21	15.0	71	C
S D	54	54.6	100	A
S F	42	41.6	99	A
S J	44	41.5	94	A
SLO	37	30.9	84	B
SON	18	13.3	74	C
STA	12	11.0	92	A
TOTALS	638	569.5	89	B